

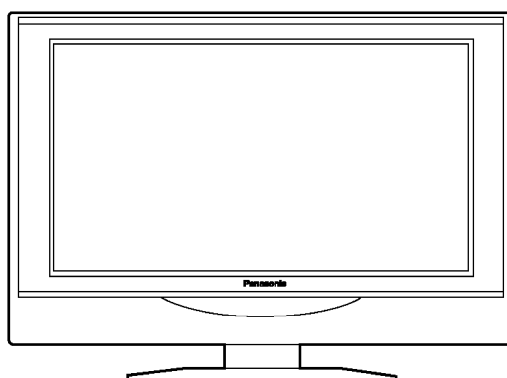
ORDER NO. ITD0310055C2

Service Manual

LCD TV

TX-22LT3

LH12 Chassis



SPECIFICATIONS

Power Source

AC 100~240V, 50/60Hz

Power Consumption

Average use: 67W

Stand-by condition: 1.8W

TV set DC 15V, 3.8 A max.

LCD

22-inch (558 mm), 16:9 aspect ratio LCD panel

Screen Size

486.8mm(W) x 273.6mm(H)

Channel Capability-100

UHF : 21-68

Sound

Speaker

Ø4cm, 2pcs, 16 Ω

Audio Output

11W (3.0W+3.0W+5.0W (Woofer)), 10%THD

Headphones

M3(3.5 mm) Jack x 1

Receiving System/ Band name

PAL I

UHF E21 - 68

PAL 525/60

Playback of NTSC tape from some PAL video recorders (VCR)

M.NTSC

Playback from M.NTSC Videorecorders (VCR)

NTSC (AV input only)

Playback from NTSC Videorecorders (VCR)

Aerial-Rear

UHF

Operating Conditions

Temperature: 41°F-95°F(5-35°C)

Humidity: 5%-90% RH (non-condensing)

Connection Terminals

AV1 (Scart connector)

21 Pin socket (Audio/Video in, Audio/Video out, RGB in, Q-Link)

AV2 (Scart connector)

21 Pin socket (Audio/Video in, Audio/Video out, S-Video in, Q-Link)

AV3

VIDEO

RCA PIN Type × 1

S-VIDEO

Mini DIN 4-pin

AUDIO L-R

RCA PIN Type × 2

Dimensions (W x D x H)

Including TV Stand

586mm x 255mm x 428mm

TV Set Only

586mm x 96mm x 387mm

Weight (Mass)

11kg Net

Note:

Design and Specifications are subject to change without notice.

Weight and Dimensions shown are approximate.

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 WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic®

1. Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUGH CURRENT) expressed as voltage U_1 and U_2 , does not exceed the following values:
For a. c.: $U_1 = 35 \text{ V (peak)}$ and $U_2 = 0.35 \text{ V (peak)}$;
For d. c.: $U_1 = 1.0 \text{ V}$,

Note:

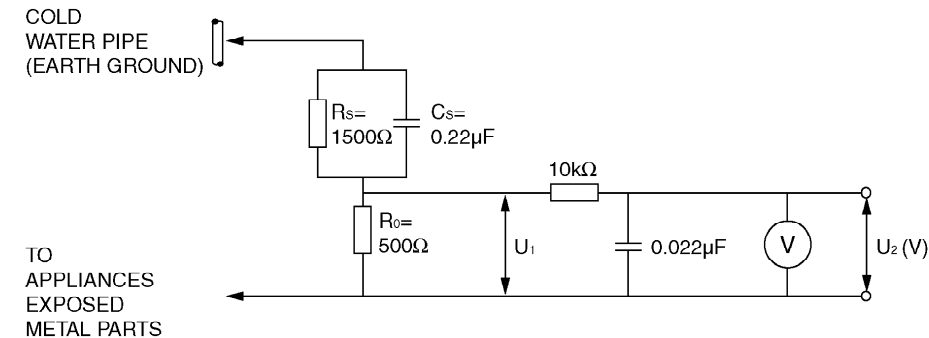
The limit value of $U_2 = 0.35 \text{ V (peak)}$ for a. c. and $U_1 = 1.0 \text{ V}$ for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

The limit value $U_1 = 35 \text{ V (peak)}$ for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz.

7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Figure 1

Measuring network for TOUCH CURRENTS



Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance: $\geq 1 \text{ M}\Omega$

Input capacitance: $\leq 200 \text{ pF}$

Frequency range: 15 Hz to 1 MHz and d.c. respectively

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

2. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices


Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate


electrical charges sufficient to damage ES devices.

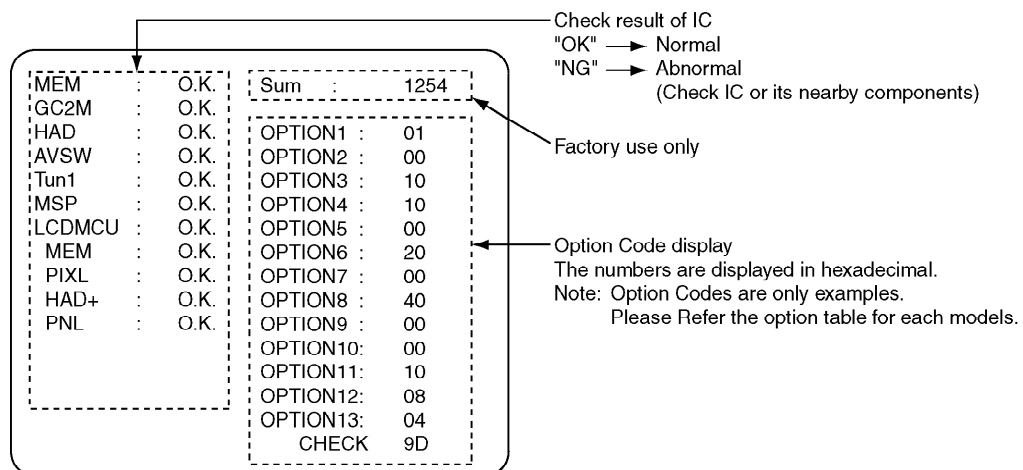
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
Caution
Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3. Self Check

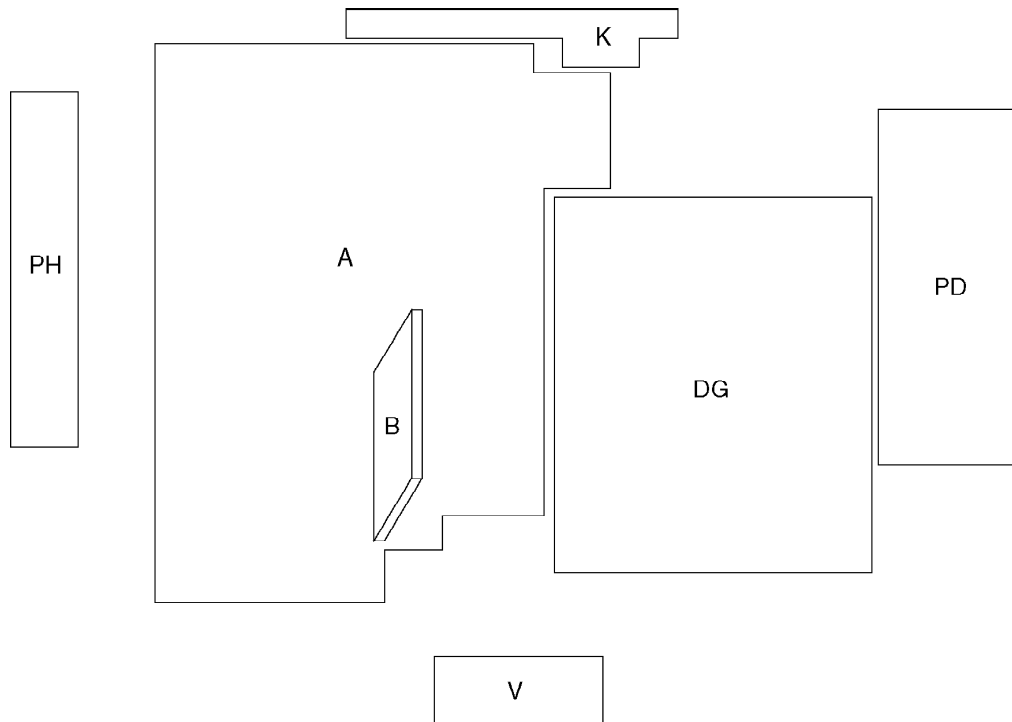
1. Self-Check is used to automatically check the bus lines and hexadecimal code of the TV set.
2. To get into the Self -Check mode press the Down () button on the customer controls at the front of the set, at the same time pressing the Recall button on the remote control, and the screen will show :



If the CCU ports have been checked and found to be incorrect or not located then "--" will appear in place of "O.K.".

Display	Ref. No.	Description	P.C.B.
MEM	IC1004	EEPROM	DG-Board
GC2M	IC9001	Global Core	DG-Board
HAD	IC9007	RGB A/D Converter	DG-Board
AVSW	IC4001	AV selector	A-Board
Tun1	TNR001	Tuner	B-Board
MSP	IC2501	Multi Sound Processor	A-Board
LCDMCU	IC3002	LCD MCU	DG-Board
MEM	IC3001	EEPROM	DG-Board
PIXL	IC6004	Pixel Converter	DG-Board
HAD+	IC6003	RGB A/D Converter	DG-Board
PNL	-	LCD Panel	-

4. Chasis Board Layout

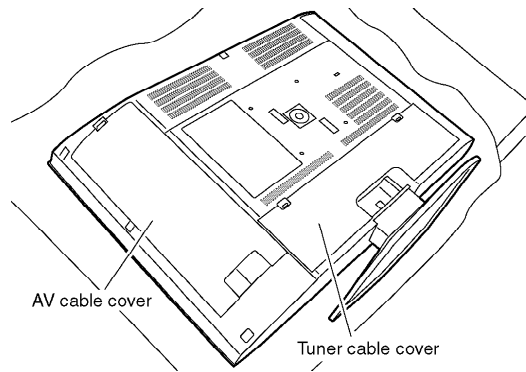


Board Name	Function
A-Board	Main (DC Power Supply, Audio, Input Select, AV Connector)
B - Board	Tuner
DG - Board	Global Core, RGB Processor, Micro Processor, Pixel Converter)
K - Board	Switch
PD - Board	Back Light Inverter
PH - Board	Back Light Inverter
V - Board	RM, LED

5. Servicing method

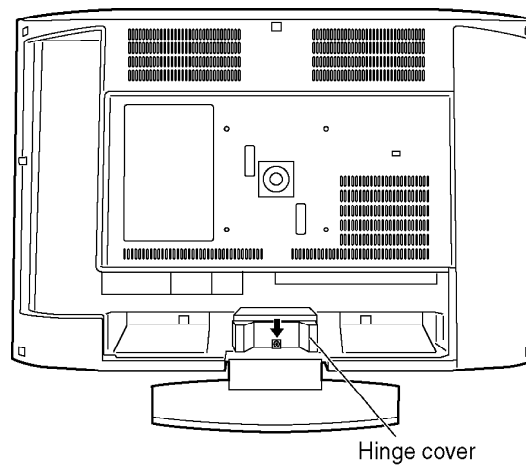
5.1. Removing the tilt base

1. Lay down the main unit so that the rear cover faces upward.
2. Remove the AV cable cover.
3. Remove the tuner cable cover.



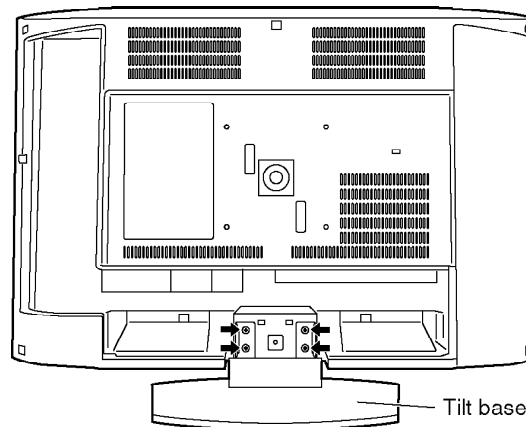
4. Remove the fixing screw (1pcs).

5. Remove the hinge cover.



6. Remove the fixing screws (4pcs).

7. Remove the tilt base.

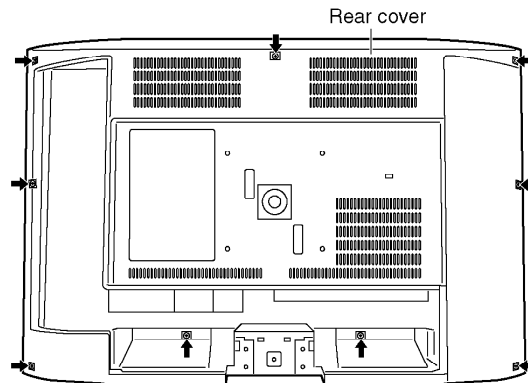


5.2. Removing the rear cover

1. Remove the tilt base. (See 5.1.)

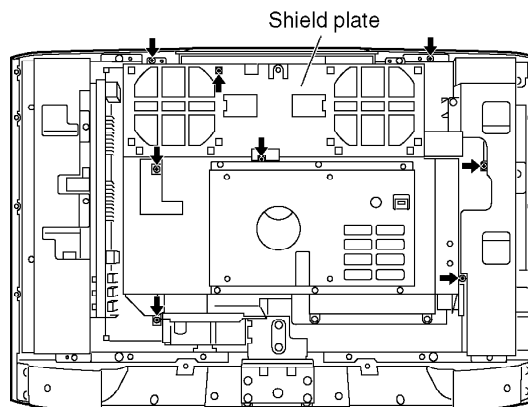
2. Remove the fixing screws (9pcs).

3. Remove the rear cover.



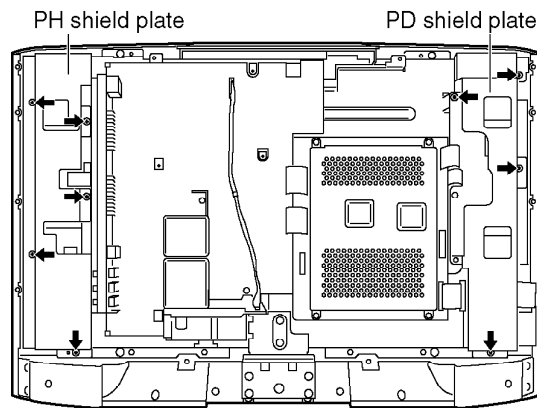
5.3. Removing the shield plate

1. Remove the rear cover. (See 5.2.)
2. Remove the fixing screws (8psc).
3. Remove the shield plate.



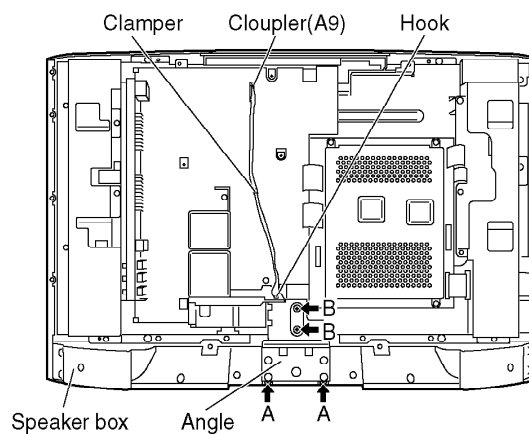
5.4. Removing the PH shield plate and the PD shield plate

1. Remove the shield plate. (See 5.3.)
2. Remove the fixing screws (5psc).
3. Remove the PH shield plate.
4. Remove the fixing screws (4psc).
5. Remove the PD shield plate.



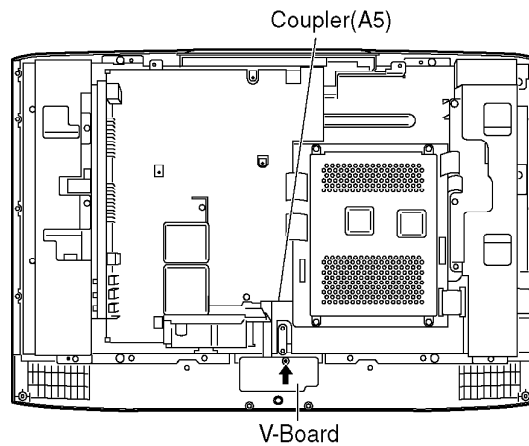
5.5. Removing the speaker box

1. Remove the shield plate (See 5.3.)
2. Remove the fixing screws A (2pcs) and B (2pcs).
3. Remove the angle.
4. Disconnect the coupler(A9), and unlock the cable clamber and hook to free the cable
5. Remove the speaker box.



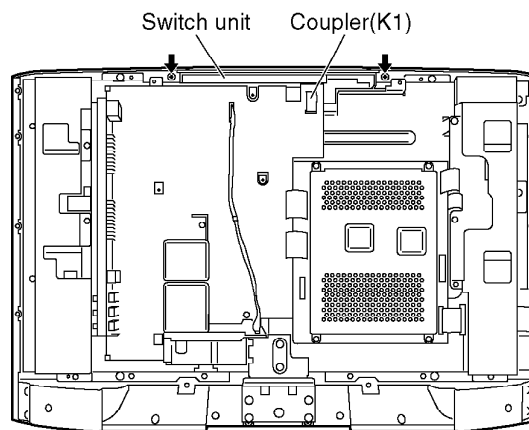
5.6. Removing the V-Board

1. Remove the speaker box. (See 5.5.)
2. Disconnect the coupler (A5).
3. Remove the fixing screw (1pcs).
4. Remove the V-Board.



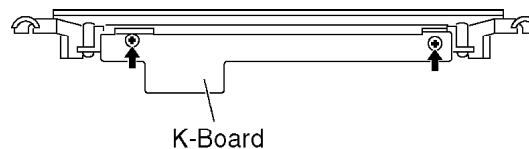
5.7. Removing the switch unit

1. Remove the shield plate. (See 5.3.)
2. Disconnect the coupler (K1).
3. Remove the fixing screws (2pcs).
4. Remove the switch unit.



5.8. Removing the K-Board

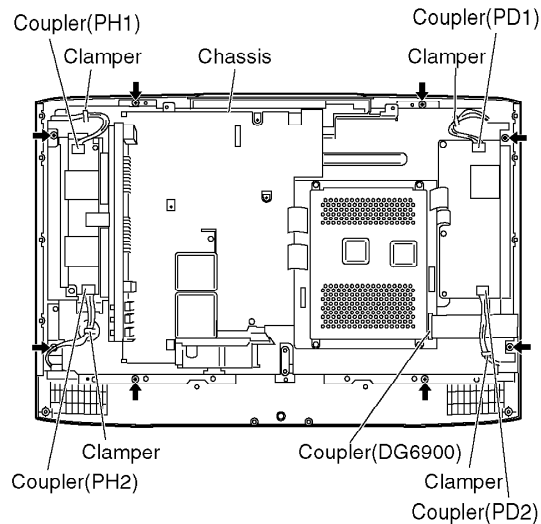
1. Remove the switch unit. (See 5.7.)
2. Remove the fixing screws (2psc).
3. Remove the K-Board.



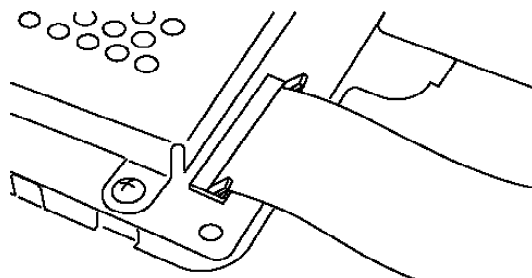
5.9. Removing the chassis

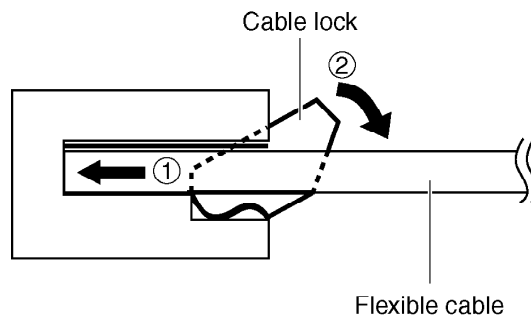
1. Remove the PH shield plate and the PD shield plate. (See 5.4.)

2. Remove the V-Board. (See 5.6.)
3. Disconnect the couplers (PH1, PH2, PD1, PD2 and DG6900), and unlock the cable clampers to free the cable.
4. Remove the chassis.



- Disconnecting flexible cable from the coupler. / Lift up both ends of the cable lock (brown colored) simultaneously to release the locking. Once the flat cable is disconnected from the coupler, the cable lock tends to detach from the coupler easily. Due precaution should be paid on it.
- Reconnecting flexible cable to the coupler.
Attach the cable lock (brown) to the coupler (white) with its both ends being pulled up. Insert the flat cable into the coupler over the cable lock until the cable stops firmly at the coupler end. Press down both ends of the cable lock until their upper faces are positioned flat to lock the cable.





5.10. Removing the tuner cover and the terminal cover

1. Remove the rear cover. (See 5.2.)

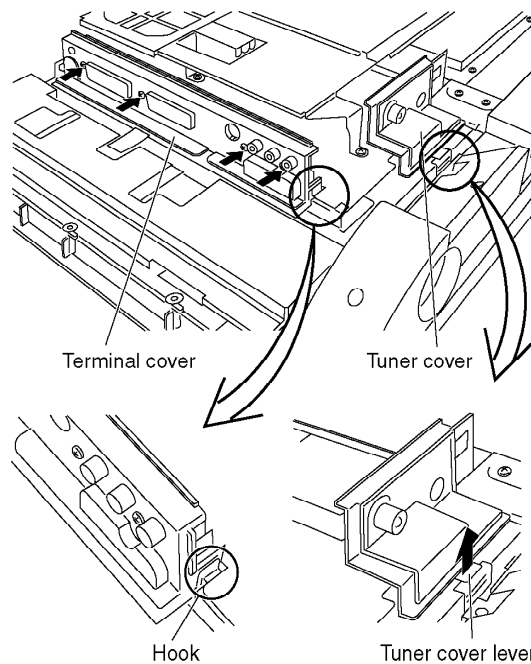
2. Remove the tuner cover.

*The tuner cover lever is pulled up and remove the tuner cover.

3. Remove the fixing screws (4pcs).

4. Remove the terminal cover.

*A hooks is removed.



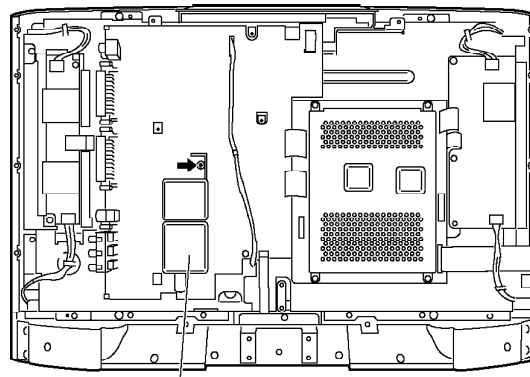
5.11. Removing the B-Board (with tuner assembly)

1. Remove the shield plate. (See 5.3.)

2. Remove the tuner cover (See 5.10.)

3. Remove the fixing screw (1pcs).

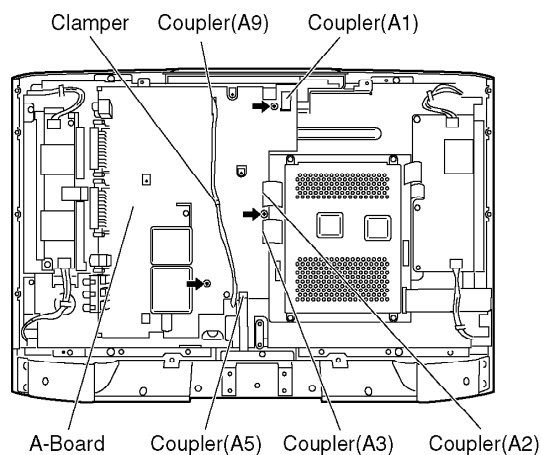
4. Remove the B-Board.



B-Board (with tuner assembly)

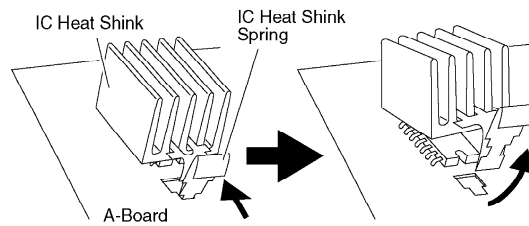
5.12. Removing the A-Board

1. Remove the shield plate. (See 5.3.)
2. Remove the angle. (See 5.5.)
3. Remove the terminal cover. (See 5.10.)
4. Remove B-Board. (See 5.11.)
5. Disconnect the couplers (A1,A2, A3 and A5).
6. Disconnect the coupler (A9), and unlock the cable clamber to free the cable.
7. Remove the fixing screws (3pcs).
8. Remove the A-Board.



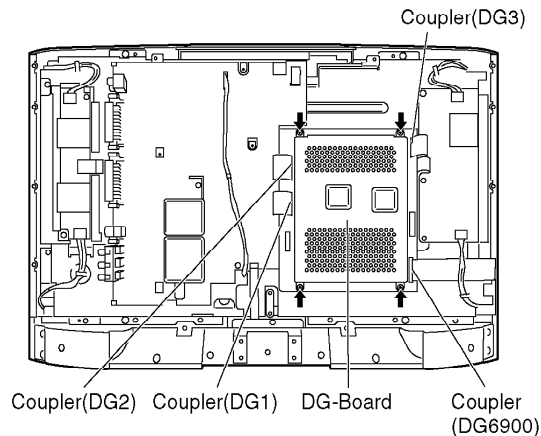
5.13. Removing the IC Heat Shink

1. Pressing IC Heat Shink Spring and pull up IC Heat Shink.



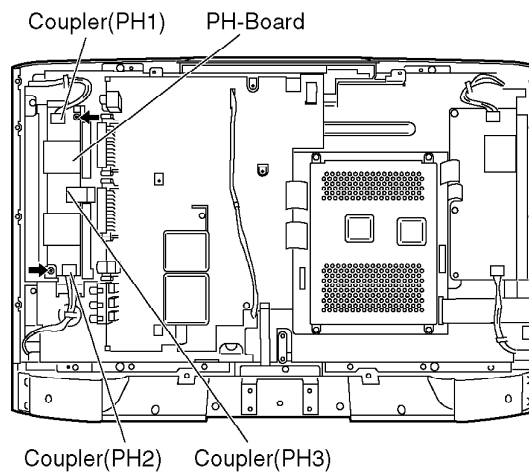
5.14. Removing the DG-Board

1. Remove the shield plate. (See 5.3.)
2. Disconnect the couplers (DG1, DG2, DG3 and DG6900).
 *When removing coupler (DG6900), cautions are required for the handling of a connector. (See 5.9.)
3. Remove the fixing screws (4pcs).
4. Remove the DG-Board.



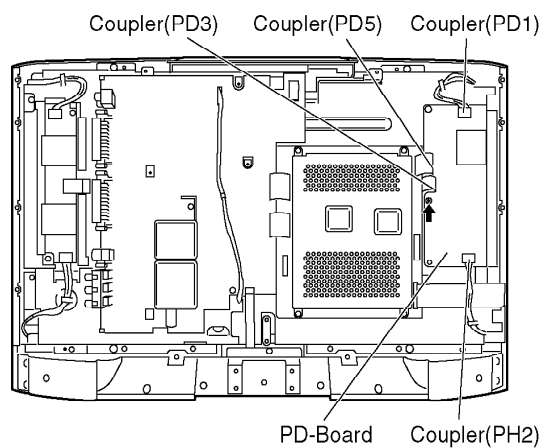
5.15. Removing the PH-Board

1. Remove the rear cover. (See 5.2.)
2. Remove the PH shield plate. (See 5.4.)
3. Disconnect the couplers (PH1, PH2 and PH3).
4. Remove the fixing screws (2pcs).
5. Remove the PH-Board.



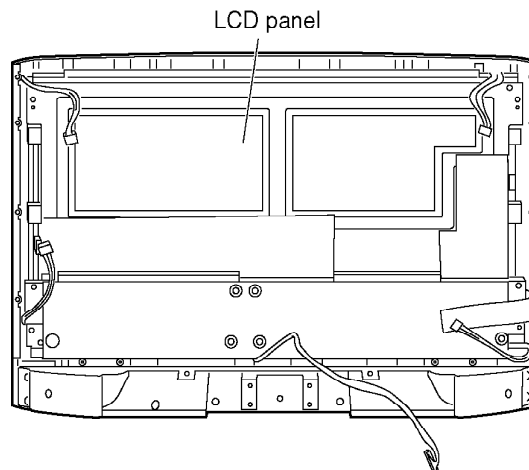
5.16. Removing the PD-Board

1. Remove the rear cover. (See 5.2.)
2. Remove the PD shield plate. (See 5.4.)
3. Disconnect the couplers (PD1, PD2, PD3 and PD5).
4. Remove the fixing screw (1pcs).
5. Remove the PD-Board.



5.17. Removing the LCD panel

1. Remove the chassis. (See 5.9.)
2. Remove the LCD panel.



6. Service Mode Function

MPU controls the functions switching for each IICs through IIC bus in this chassis. The following setting and adjustment can be adjusted by remote control in Service Mode.

6.1. How to enter SERVICE 1

1. In sound menu, set BASS to MAXIMUM, and set TREBLE to MINIMUM.
2. Simultaneously press INDEX button on remote control and DOWN button [–/∇] on the TV set.

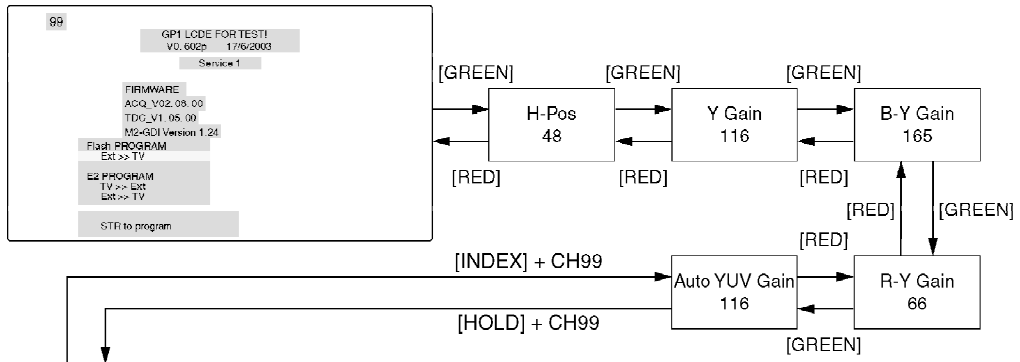
6.2. How to enter SERVICE 2

1. Set the channel to CH99.
2. Press HOLD button on remote control.

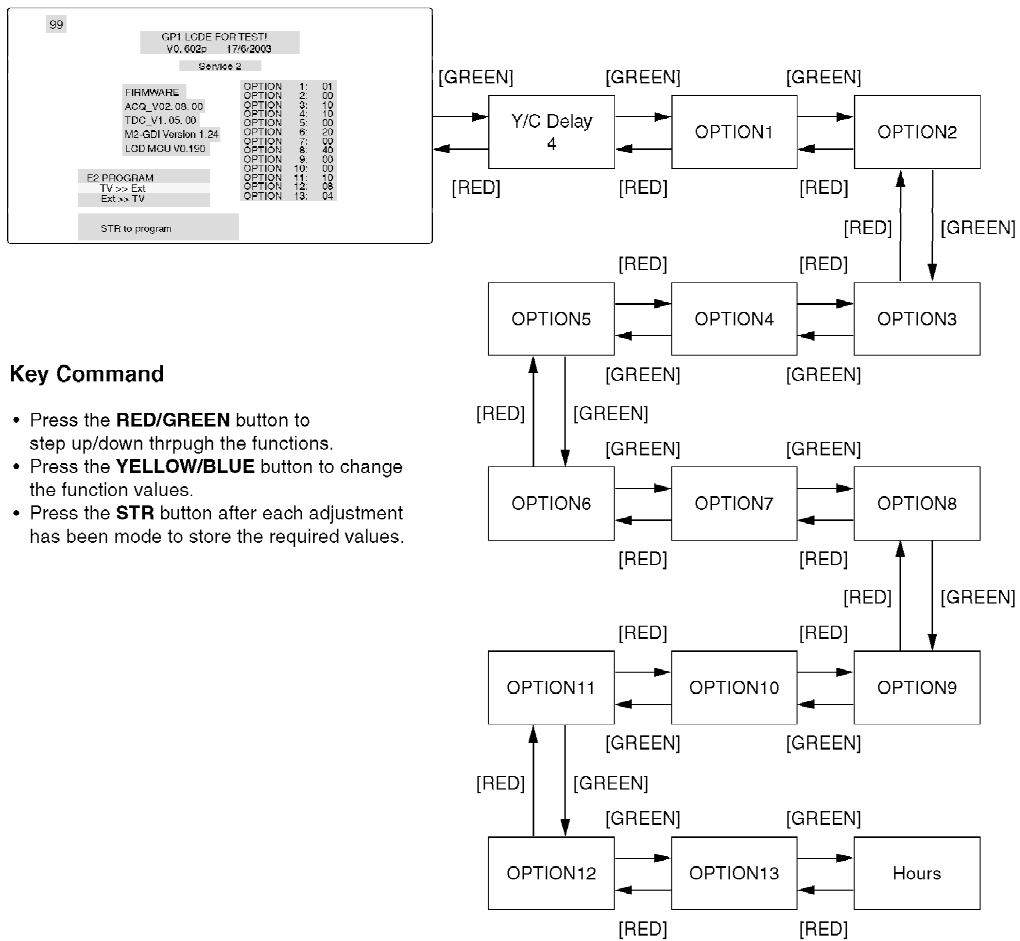
Note:

To exit to Service mode, press N or Power button on remote control.

SERVICE 1



SERVICE 2



Key Command

- Press the **RED/GREEN** button to step up/down through the functions.
- Press the **YELLOW/BLUE** button to change the function values.
- Press the **STR** button after each adjustment has been made to store the required values.

6.3. Option Description

option1		01		
b0	1	Colour system	Auto(1)	
b1	0		SECAM(1)	
b2	0		NTSC(1)	
b3	0		M.NTSC(1)	
b4	0	free		
b5	0	free		
b6	0	free		
b7	0	free		
option2		00		
b0	0	CH Plan	ASIA / M.E. / HK/UK / CHINA(1)	
b1	0		NZ/INDNES(1)	
b2	0		AUSTRALIA(1)	
b3	0		E.EUROPE(1)	
b4	0		SPECIAL(1)	
b5	0		AMERICA(1)	
b6	0		CATV(1)	
b7	0		JAPAN(1)	
option3		10		
b0	0	free	without sub-picture(0), with sub-picture(1)	
b1	0	free	2tuner(1), 1tuner(0)	
b2	0	reserve(22inch for Asia)	enable(1)	
b3	0	free	enable(1)	
b4	1	LT(1), TA(0)	16:9 (1) 4:3 (0) (change multi window/aspect operation)	
b5	0	HYPER	UHF only (0), UHF/VHF (1)	
b6	0	SIF	I only(0), BG only(1)	
b7	0		I/BG/DK/L(2), BG/DK(3)	
option4		10		
b0	0	A2 enable	enable(1)	
b1	0		not use	
b2	0		not use	
b3	0		not use	
b4	1	NICAM enable	enable(1)	
b5	0		not use	
b6	0		not use	
b7	0		not use	
option5		00		
b0	0	A2 select 6.5MHz	5.742MHz(0) 6.742MHz(1)	
b1	0	NICAM priority	ASIA/M.E.(1)	
b2	0		HK/UK(1)	
b3	0		CHINA(1)	
b4	0		NZ/INDN(1)	
b5	0		AUSTRALIA(1)	
b6	0		E.EURO(1)	
b7	0		SPECIAL(1)	
option6		20		
b0	0	free		
b1	0	SASO enable	SASO enable(1)	
b2	0	Noise mute	Noise mute enable(0)	
b3	0	Monitor out AV1 mute	Monitor out AV1 mute(1)	
b4	0	free		
b5	1	Tuner	MACO tuner (0), tuner (1)	
b6	0	free		
b7	0	IF I2C	I2C controlled Tuner IF module (1)	
option7		00		
b0	0	Power up EC-Mode	Power on EC enable (1)	
b1	0	CH Blanking	Blanking enable (1)	
b2	0	AV Blanking	Blanking enable (1)	
b3	0	Auto WIDE	WSS enable only in aspect Auto (0), WSS always enable (1)	
b4	0	Volume correction	TV Volume correction enable (1)	
b5	0	AVLink	Q-Link off selectable in menu (1)	
b6	0	MPX/NICAM display	Display NICAM (0), Display MPX (1)	
b7	0	Owner ID	not use	

option8	40		
b0	0	Teletext CH Refresh	not use
b1	0	free	
b2	0	free	
b3	0	RF Attenuation	Enable(1)
b4	0	Fine tuning	Enable(1)
b5	0	Search speed	Slow(1) Fast(0)
b6	1	TEXT	Reserved
b7	0	TEXT TOP	TOP enable (1)
option9	00		
b0	0	free	
b1	0	free	
b2	0	free	
b3	0	free	
b4	0	free	
b5	0	shipping Sound menu	MUSIC(0) / CINEMA(1)
b6	0	Volume curve	Volume curve1(0), curve2(1)
b7	0	free	
option10	00		
b0	0	OSD language	not use
b1	0	ACI all country	ACI enable(1), only Netherlands(0)
b2	0	ACI auto MP	ACI aut multi packing enable(1)
b3	0	ACI offset	ACI offset fot VCR prog. enable(1)
b4	0	Blue Back	not use
b5	0	free	
b6	0	free	
b7	0	free	
option11	10		
b0	0	Acuity Demo	enable(1)
b1	0	free	
b2	0	Shop mode	enable(1)
b3	0	User aspect Just	enable(1)
b4	1	User aspect 14:9	enable(1)
b5	0	NICAM C4 bit	enable(1)
b6	0	ID-1	enable(1)
b7	0	free	
option12	08	Area Option	
b0	0	Asia	Asia(1), europe(0)
b1	0	Australia	not use
b2	0	Ireland/India	Ireland(1)
b3	1	UK	UK(1)
b4	0	MELCOA	not use
b5	0	28 inch	28 inch (1) when only Large size=0, Wide=1, PTV=0
b6	0	Large size	52(1)/42(0) for RTV, 36(1)/32(0) for Wide, 34(1)/29(0) for 4:3
b7	0	free	
option13	04	Temporary	
b0	0	GC2V ES2	ES2(1), ES1(0)
b1	0	Tuner IF 38.9	38.9MHz(0), 39.5MHz(1) [UK/Ireland]
b2	1	NewALBD	Zoom1 or Zoom3 (0), Zoom1 or 14:9(1)
b3	0		
b4	0		
b5	0		
b6	0		
b7	0		

7. Conductor Views

7.1. A-Board

7.2. DG-Board

7.3. PD-Board

7.4. PH-Board

7.5. B, H1, H2, K, P1 and P2-Board

8. Block and Schematic Diagrams

8.1. Schematic Diagram Notes

Important Safety Notice

Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Notes:

1. Resistor

All resistors are carbon 1/4W resistor, unless marked as follows:
Unit of resistance is Ohm [Ω] (K=1,000, M=1,000,000).

○

Δ

⊠

Nontammable

Solid

Wire Wound

⊞

⊞

⊞

: Metal Oxide

: Metal Film

: Fuse:

2. Capacitor

All capacitors are ceramic 50V capacitor, unless marked as follows:
Unit of capacitance is μF, unless otherwise noted.

⊞

⊞

⊞

⊞

: Temperature Compensation

: Polyester

: Metalized Polyester

: Polypropylene

⊞

⊞

⊞

⊞

: Electrolytic

: Bipolar

: Dipped Tantalum

: Z-Type

3. Coil

Unit of inductance is μH, unless otherwise noted.

4. Test Point

○ : Test Point position

5. Earth Symbol

⋈ : Chassis Earth (Cold)

⌵ : Line Earth (Hot)

6. Voltage Measurement

Voltage is measured by a DC voltmeter.

Conditions of the measurement are the following:
Power Source AC 100-240V, 50/60Hz
Receiving Signal Colour Bar signal (RF)
All customer's controls Maximum positions

7. Number in red circle indicates waveform number.

(See waveform pattern table.)

8. When arrow mark (↗) is found, connection is easily found from the direction of arrow

9. Indicates the major signal flow.

: Video ➡ : Audio ⇨

10. This schematic diagram is the latest at the time of printing and subject to change without notice.

TX-22LT3
Schematic Diagram Notes

Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.
The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.
All circuits, except the Power Circuit, are cold.
Precautions
a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
b. Do not short-circuit the hot and cold circuits or a fuse may blow and parts may break.
c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
d. Make sure to disconnect the power plug before removing the chassis

2. Following diodes are interchangeable.

MA150- MA162 (Replacement part)

TX-22LT3
Schematic Diagram Notes

8.2. Power Block Diagram

8.3. Signal Block Diagram

8.4. A-Board (1 of 3) Schematic Diagram

8.5. A-Board (2 of 3), B-Board, K-Board and V-Board Schematic

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Diagram

8.6. A-Board (3 of 3) Schematic Diagram

8.7. DG-Board (1 of 5) Schematic Diagram

8.8. DG-Board (2 of 5) Schematic Diagram

8.9. DG-Board (3 of 5) Schematic Diagram

8.10. DG-Board (4 of 5) Schematic Diagram

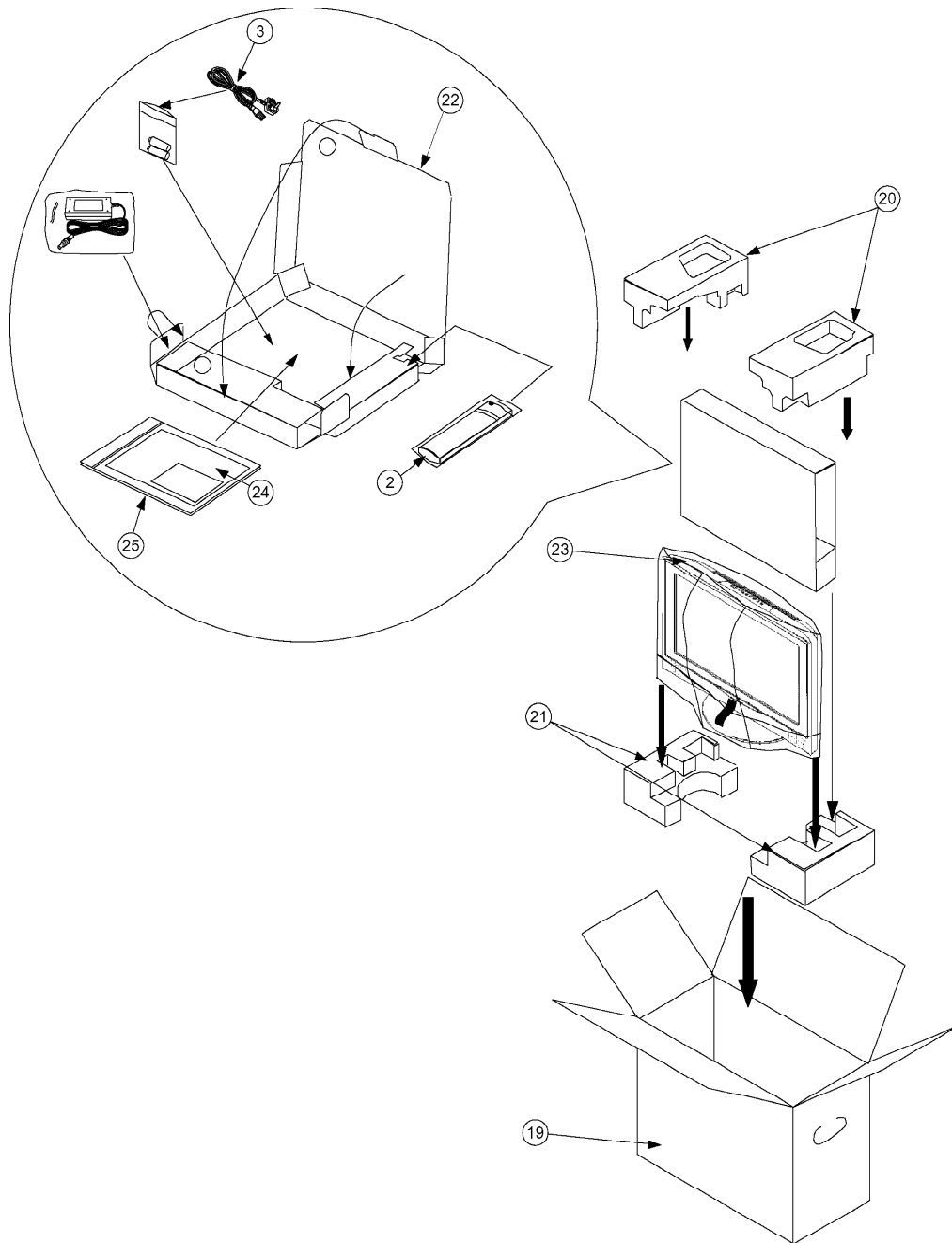
8.11. DG-Board (5 of 5) Schematic Diagram

8.12. PD-Board and PH-Board Schematic Diagram

9. Parts Location & Mechanical Replacement Parts List

9.1. Parts Location

9.2. Packing Exploded View



9.3. Mechanical Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	EAB512A2	SPEAKER BOX	1	
2	EUR511256	REMOCON TRANSMITTER	1	
3	K2CT3AA00002	AC POWER CORD	1	K2CR2DA00007 
4	L5EDD5M00001	LCD PANEL	1	
	N0JZHK000012	AC ADAPTOR	1	
5	TBXA37801	POWER BUTTON	1	
6	TBXA37903	CONTROL BUTTON	1	
8	TEJA078	LOCK HINGE(LEFT)	1	
7	TEJA079	LOCK HINGE(RIGHT)	1	
9	TKKC5152	LED TREND SHAFT	1	
10	TKKH5089-1	RECIEVER COVER	1	
11	TKKL5141-3	CONNECTOR COVER	2	
12	TKKL5260	HINGE COVER	1	
13	TKKL5280	TUNER CABLE COVER	1	
14	TKPA72203	FRONT PANEL	1	
15	TKPA72304	BUTTON COVER	1	
16	TKPA72704	PANEL	1	
17	TKPA80501A	TERMINAL COVER	1	
18	TKPA80601	TUNER COVER	1	
29	TKXA14801A	BASE COVER	1	
	TKZG5042	BASE METAL	1	
	TBLG3051	SET LEG	6	
	TMME149	CLAMPER	4	
19	TPCB30604	CARTON BOX	1	
20	TPDA0673	CUSHION(TOP)	1	
21	TPDA0674	CUSHION(BOTTOM)	1	
22	TPDF1102	ACCESSORY BOX	1	
23	TPEH211	PROTECT COVER	1	
24	TQBC0635	INSTRUCTION BOOK(ENGLISH)	1	
25	TQE8513-2	POLY BAG	1	
	TSXL196	CABLE(50P)	1	
	TSXL326	CABLE(10P)	1	
	TSXL327	CABLE(50P)	1	
	TSXL328	CABLE(8P)	1	
	TSXL329	CABLE(8P)	1	
	TSXL330	CABLE(25P)	1	
	TSXL331	CABLE(21P)	1	
26	TTUA0764	REAR COVER ASS.Y	1	
27	TTUA0827	AV CABLE COVER	1	
28	TTYA0599	CABINET ASS.Y	1	
	XTB4+10F	SCREW	1	
	XTB4+15JFZ	SCREW	24	
	XTV3+10J	SCREW	2	
	XTV3+10JFZ	SCREW	7	
	XTV3+12G	SCREW	2	
	XTW3+8T	SCREW	30	
	XYN4+J10	SCREW	4	
	XZBT6532	POLY BAG	1	

10. Replacement Parts List

10.1. Replacement Parts List Notes

Important Safety Notice

*Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.*

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item.
After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
After the end of this period, the assembly will no longer be available.

Abbreviation of part name and description

1. Resistor

Example:

ERD25TJ104 C 100KOHM, J, 1/4W

Type Allowance

2. Capacitor

Example:

ECKF1H103ZF C 0.01UF, Z, 50V

Type Allowance

Type	Allowance
C : Carbon	F : $\pm 1\%$
F : Fuse	G : $\pm 2\%$
M : Metal Oxide	J : $\pm 5\%$
Metal Film	K : $\pm 10\%$
S : Solid	M : $\pm 20\%$
W : Wire Wound	

Type	Allowance
C : Ceramic	C : $\pm 0.25\text{pF}$
E : Electrolytic	D : $\pm 0.5\text{pF}$
P : Polyester	F : $\pm 1\text{pF}$
Polypropylene	G : $\pm 3\text{pF}$
T : Tantalum	J : $\pm 5\text{pF}$
	K : $\pm 10\text{pF}$
	L : $\pm 15\text{pF}$
	M : $\pm 20\text{pF}$
	P : +100%, -0%
	Z : +80%, -20%

10.2. Electrical Replacement Parts List

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
A1	TJSF18208	8P CONNECTOR	1	K1MN08A00040
A2	K1MN25A00030	25P CONNECTOR	1	
A3	K1MN50A00005	50P CONNECTOR	1	
A5	TJSF27608	8P CONNECTOR	1	K1MN08B00093
A6	K1KA09A00064	9P CONNECTOR	1	
A7	K1KA15A00064	15P CONNECTOR	1	
A9	TJS118650	8P CONNECTOR	1	K1KA08A00178
B1	K1KB09B00019	9P CONNECTOR	1	
B2	K1KB15B00013	15P CONNECTOR	1	
C001	ECJ2VB1C104K	C 0.1UF, K, 16V	1	
C003	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C004	F2A0J331A137	E 330UF, 6.3V	1	
C005	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C008	F2A0J331A137	E 330UF, 6.3V	1	
C009	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C201	ECJ2XB1H103K	C 0.01UF, K, 50V	1	
C202	F2A1C470A121	E 47UF, 16V	1	
C601-03	F2A1E471A102	E 470UF, 25V	3	
C604	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C605	F2A1H100A120	E 10UF, 50V	1	
C606	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C607	ECJ2VB1C224K	C 0.22UF, K, 16V	1	
C608,09	ECJ2VF1H104Z	C 0.1UF, Z, 50V	2	
C610,11	ECJ3YB1E105K	C 1UF, K, 25V	2	
C612	ECJ2XB1A105K	C 1UF, K, 10V	1	
C613	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C617	EEVHB1H100	E 10UF, 50V	1	
C618,19	ECHU1H563JB9	P 0.056UF. 50V	2	
C622	ECJ2XF1C334Z	C 0.33UF, Z, 16V	1	
C623,24	ECHU1H563JB9	P 0.056UF. 50V	2	
C626	EEVHB1H100	E 10UF, 50V	1	
C627,28	ECJ2VF1H104Z	C 0.1UF, Z, 50V	2	
C631	ECJ2XF1C334Z	C 0.33UF, Z, 16V	1	
C651-56	F1A3F1500001	E 15UF, 3KV	6	
C660-65	F1A3F1500001	E 15UF, 3KV	6	
C673,74	ECJ3YB1E105K	C 1UF, K, 25V	2	
C801	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C803	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C804	F2A1E221A096	E 220UF, 25V	1	
C805	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C806	F2A1H100A120	E 10UF, 50V	1	
C807	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C808	F2A1C6810005	E 680UF, 16V	1	
C809	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C810	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C813	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C814	F2A1H100A120	E 10UF, 50V	1	
C817	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C818	F2A1E471A102	E 470UF, 25V	1	
C821	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C822	F2A0J122A139	E 12000UF, 6.3V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C823	ECJ2XB1H104K	C 0.1UF, K, 50V	1	
C824	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C826,27	ECJ2VF1H103Z	C 0.01UF, Z, 50V	2	
C828	F2A1E471A102	E 470UF, 25V	1	
C829	F2A1E471A096	E 470UF, 25V	1	
C830	F2A1C6810005	E 680UF, 16V	1	
C832	F2A0J122A139	E 12000UF, 6.3V	1	
C834	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C835	ECJ2XB1H104K	C 0.1UF, K, 50V	1	
C836-38	ECJ2VF1H103Z	C 0.01UF, Z, 50V	3	
C839	F2A1E471A094	E 470UF, 25V	1	
C840	F2A1C6810005	E 680UF, 16V	1	
C841	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C843	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C844	ECJ2XB1H104K	C 0.1UF, K, 50V	1	
C845	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C846	ECJ2XB1H104K	C 0.1UF, K, 50V	1	
C847	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C851	F2A1H100A126	E 10UF, 50V	1	
C852	ECJ2XB1H472K	C 4700PF, K, 50V	1	
C853	ECJ2XB1H271K	C 270PF, K, 50V	1	
C854	ECJ2VB1C104K	C 0.1UF, K, 16V	1	
C855	ECJ2VB1C224K	C 0.22UF, K, 16V	1	
C856	F2A1H4R7A120	E 4.7UF, 50V	1	
C871	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C872	F2A1E471A102	E 470UF, 25V	1	
C873	F2A1C6810005	E 680UF, 16V	1	
C874	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C876	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C877	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C881	EEUFC1E470	E 47UF, 25V	1	
C890	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C891	F2A1E471A096	E 470UF, 25V	1	
C892	F2A1C6810005	E 680UF, 16V	1	
C893	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C894	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C895	ECJ2XB1H222K	C 2200PF, K, 50V	1	
C1001	EEVHB0G101	E 100UF 4V	1	
C1003	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1004	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C1005	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C1006	EEVHB1C470P	E 47UF, 16V	1	
C1007-09	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C1012	EEVHB1C100	E 10UF, 16V	1	
C1013	EEVHB0G101	E 100UF 4V	1	
C1015-17	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C1018	EEVHB1C100	E 10UF, 16V	1	
C1019	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C1021	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C1022	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1023	EEVHB0G101	E 100UF 4V	1	
C1025	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C1027-29	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C1030	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1031	ECJ1XC1H151J	C 150PF, J, 50V	1	
C1033	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1034	ECJ1XC1H220J	C 22PF, J, 50V	1	
C1035	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C1036	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1037	ECJ1VB1H221K	C 220UF, K, 50V	1	
C1038	ECJ1XC1H220J	C 22PF, J, 50V	1	
C1039	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1041	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C1042	ECJ1VB1H221K	C 220UF, K, 50V	1	
C1043	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1045	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C1046-51	ECJ1XF1C104Z	C 0.1UF, Z, 16V	6	
C1052	EEVHB1C100	E 10UF, 16V	1	
C1054	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1056	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C1057	F1J1A1050020	C 1UF, Z, 50V	1	
C1058	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1059	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C1060,61	ECJ1VF1A105Z	C 1UF, Z, 10V	2	
C1062,63	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C1064,65	ECJ1XC1H271J	C 270PF, J, 50V	2	
C1066	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C1068	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C1069	ECJ1XC1H271J	C 270PF, J, 50V	1	
C1071,72	ECJ1XC1H271J	C 270PF, J, 50V	2	
C1074-76	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C2001	ECJ2XB1H473K	C 0.047UF, K, 50V	1	
C2002,03	ECJ2XB1H103K	C 0.01UF, K, 50V	2	
C2004	ECJ2XB1H473K	C 0.047UF, K, 50V	1	
C2005	ECA1EEN101	E 100UF, 25V	1	
C2006	ECJ2XB1H472K	C 4700PF, K, 50V	1	
C2007	ECA1EEN101	E 100UF, 25V	1	
C2008	ECJ2XB1H472K	C 4700PF, K, 50V	1	
C2009	F2A1C470A121	E 47UF, 16V	1	
C2010	ECJ2YB1E224K	C 0.22UF, K, 25V	1	
C2011,12	ECJ2VB1C224K	C 0.22UF, K, 16V	2	
C2013	ECJ2YB1E224K	C 0.22UF, K, 25V	1	
C2014	F2A1E471A102	E 470UF, 25V	1	
C2015	F2A1C470A121	E 47UF, 16V	1	
C2016	F2A1C220A121	E 22UF, 16V	1	
C2017	ECJ2XB1H682K	C 6800PF, K, 50V	1	ECJ2XB1H102K
C2018	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C2019	ECJ2YF1C225Z	C 22PF, Z, 16V	1	
C2020	ECJ2XC1H102J	C 1000PF, J, 50V	1	
C2021	ECJ2YF1C225Z	C 22PF, Z, 16V	1	
C2022	ECJ2XB1H682K	C 6200PF, K, 50V	1	ECJ2XB1H102K
C2023,24	ECJ2YB1E224K	C 0.22UF, K, 25V	2	
C2025-27	F2A1E101A094	E 100UF, 25V	3	
C2028	F2A1H220A120	E 22UF, 50V	1	
C2029-32	ECJ2YB1E224K	C 0.22UF, K, 25V	4	
C2102	ECJ2VB1C104K	C 0.1UF, K, 16V	1	
C2200	F2A1C470A121	E 47UF, 16V	1	
C2201	F2A1C220A121	E 22UF, 16V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2202	ECJ2XB1H682K	C 6800PF, K, 50V	1	
C2203	ECA1HEN2R2	E 2.2UF, 50V	1	
C2204	F2A1H2R2A120	E 2.2UF, 50V	1	
C2206	ECA1VM221	E 220UF, 35V	1	
C2207	F2A1E471A105	E 470UF, 25V	1	
C2208	ECJ2YF1C225Z	C 22PF, Z, 16V	1	
C2209	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C2211	ECJ2XC1H102J	C 1000PF, J, 50V	1	
C2212-15	ECJ2YB1E224K	C 0.22UF, K, 25V	4	
C2501	ECJ2XC1H560J	C 56PF, J, 50V	1	
C2502	ECJ2XC1H100D	C 10PF, D, 50V	1	
C2503	ECJ2XC1H220J	C 22UF, J, 50V	1	
C2504	ECJ2XC1H470J	C 47PF, J, 50V	1	
C2506,07	ECJ2XC1H010C	C 1PF, C, 50V	2	
C2508	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C2509	ECJ2XC1H470J	C 47PF, J, 50V	1	
C2510	F2A0J101A131	E 1000UF, 6.3V	1	
C2511	ECJ2VB1C104K	C 0.1UF, K, 16V	1	
C2512	F2A1H100A120	E 10UF, 50V	1	
C2513	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C2514	F2A0J101A131	E 1000UF, 6.3V	1	
C2516	ECA1HM3R3	E 3.3UF, 50V	1	
C2517	ECJ2VB1C104K	C 0.1UF, K, 16V	1	
C2518	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C2519	F2A1C470A121	E 47UF, 16V	1	
C2520,21	F2A1H100A120	E 10UF, 50V	2	
C2522,23	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C2526,27	ECJ2XB1A105K	C 1UF, K, 10V	2	
C2528	ECJ2YB1C474K	C 0.47UF, K, 16V	1	
C2529,30	ECJ2YF1C225Z	C 22PF, Z, 16V	2	ECJ2XB1A105K
C2531,32	ECJ2XB1A105K	C 1UF, K, 10V	2	
C2533	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C3001,02	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C3003	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C3004	ECJ1VB1H103K	C 0.01UF, K, 50V	1	
C3005	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3006,07	ECJ1XC1H150J	C 15PF, J, 50V	2	
C3009	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C3010	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C3044-47	ECJ1XF1C104Z	C 0.1UF, Z, 16V	4	
C4002	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C4004-06	ECJ2VF1C105Z	C 1UF, Z, 16V	3	
C4009,10	ECJ2XB1H102K	C 1000PF, K, 50V	2	
C4011	EEVHB1C220R	E 22UF, 16V	1	
C4012	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C4013,14	EEVHB1C470P	E 47UF, 16V	2	
C4015	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C4016,17	ECJ2XB1H102K	C 1000PF, K, 50V	2	
C4019,20	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C4021	ECJ2XB1A105K	C 1UF, K, 10V	1	
C4022-25	ECJ2VF1C105Z	C 1UF, Z, 16V	4	
C4029,30	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C4031	EEVHP1C100R	E 10UF, 16V	1	
C4035	EEVHP1C100R	E 10UF, 16V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C4039	EEVHP1C100R	E 10UF, 16V	1	
C4046-50	ECJ2XC1H181J	C 180PF, J, 50V	5	
C4051	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C4052-54	ECA1CEN100	E 10UF, 16V	3	
C4056,57	ECJ2VF1H104Z	C 0.1UF, Z, 50V	2	
C4101-04	ECJ2XC1H561J	C 560PF, J, 50V	4	
C4105,06	ECJ2XC1H271J	C 270PF, J, 50V	2	
C4108	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C4109	F2A0J101A131	E 1000UF, 6.3V	1	
C4110,11	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C4112	EEVHB1H2R2	E 2.2UF, 50V	1	
C4114	EEVHB1C470P	E 47UF, 16V	1	
C4117	ECJ2VF1H104Z	C 0.1UF, Z, 50V	1	
C4118	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C4150	ECJ2XC1H561J	C 560PF, J, 50V	1	
C4153	ECJ2XC1H271J	C 270PF, J, 50V	1	
C4154,55	ECJ2XC1H561J	C 560PF, J, 50V	2	
C4156	ECJ2VF1C105Z	C 1UF, Z, 16V	1	
C4157	ECJ2XC1H561J	C 560PF, J, 50V	1	
C4158	ECJ2XC1H271J	C 270PF, J, 50V	1	
C4159,60	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C4166	EEVHB1C220R	E 22UF, 16V	1	
C4167,68	ECJ2VF1C105Z	C 1UF, Z, 16V	2	
C4171,72	ECJ2XB1H102K	C 1000PF, K, 50V	2	
C4173	ECJ2VF1H103Z	C 0.01UF, Z, 50V	1	
C4174,75	ECJ2XC1H181J	C 180PF, J, 50V	2	
C4176,77	ECA1CEN100	E 10UF, 16V	2	
C6008	EEVHB0J470	E 47UF, 6.3V	1	
C6013-15	ECJ3XB0J106M	C 10UF, M, 6.3V	3	
C6022-24	ECJ1VF1H103Z	C 0.01UF, Z, 50V	3	
C6026	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C6027	EEVHB0J470	E 47UF, 6.3V	1	
C6028-30	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C6031	ECJ1VB1C103K	C 0.01UF, K, 16V	1	
C6032	EEVHB0G101	E 100UF 4V	1	
C6035	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C6036,37	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C6038	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C6039,40	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C6041	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C6042	EEVHB0J470	E 47UF, 6.3V	1	
C6043,44	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C6045	ECJ1VB1C103K	C 0.01UF, K, 16V	1	
C6046	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C6047	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C6048	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C6049	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C6050	EEVHB0G101	E 100UF 4V	1	
C6051,52	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C6053-55	ECJ1VF1H103Z	C 0.01UF, Z, 50V	3	
C6057-62	ECJ1XF1C104Z	C 0.1UF, Z, 16V	6	
C6063	ECJ1XB0J105K	C 1UF, K, 16V	1	
C6064	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C6065	EEVHB0J470	E 47UF, 6.3V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C6066-69	ECJ1XF1C104Z	C 0.1UF, Z, 16V	4	
C6071,72	ECJ1XF1C104Z	C 0.1UF, Z, 16V	2	
C6073	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C6074-76	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C6077	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C6078	ECJ1VB1H332K	C 3300PF, K, 50V	1	
C6079-83	ECJ1XF1C104Z	C 0.1UF, Z, 16V	5	
C6085	ECJ1XC1H820J	C 82PF, J, 50V	1	
C6086-90	ECJ1XF1C104Z	C 0.1UF, Z, 16V	5	
C6190	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C6192	ECJ3YB0J335K	C 33UF, J, 25V	1	
C6901	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C6902	EEVHB0J101	E 100UF, 6.3V	1	EEVHB0J101P
C9001	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9002,03	ECJ1VC1H560J	C 56PF, J, 50V	2	
C9004	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9005,06	ECJ1VC1H560J	C 56PF, J, 50V	2	
C9007	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9008,09	ECJ1XC1H151J	C 150PF, J, 50V	2	
C9010	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9011-13	ECJ1VF1H103Z	C 0.01UF, Z, 50V	3	
C9014-16	ECJ3XB0J106M	C 10UF, M,6.3V	3	
C9017-19	ECJ1XC1H101J	C 100PF, J, 50V	3	
C9020-25	ECJ1VF1H103Z	C 0.01UF, Z, 50V	6	
C9029	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C9030	ECJ1XC1H150J	C 15PF, J, 50V	1	
C9033	ECJ1XC1H470J	C 47PF, J, 50V	1	
C9035	ECJ1XC1H150J	C 15PF, J, 50V	1	
C9036	ECJ1XC1H220J	C 22PF, J, 50V	1	
C9038	EEVHB1C100	E 10UF, 16V	1	
C9039	ECJ1XB0J105K	C 1UF, K, 16V	1	
C9041	EEVHP1C100R	E 10UF, 16V	1	
C9042	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9043	EEVHB0J470	E 47UF, 6.3V	1	
C9044	ECJ1VB1C103K	C 0.01UF, K, 16V	1	
C9045	EEVHB0G101	E 100UF 4V	1	
C9046-48	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C9049	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9052	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9053,54	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C9055	EEVHB0J470	E 47UF, 6.3V	1	
C9056	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9057	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9058,59	ECJ1XB1H102K	C 1000UF, Z, 50V	2	
C9060	ECJ1VB1C103K	C 0.01UF, K, 16V	1	
C9061	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C9062	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9063	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9064	EEVHB0G101	E 100UF 4V	1	
C9065-68	ECJ1XB1H102K	C 1000UF, Z, 50V	4	
C9069	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9070	ECJ1XB1H102K	C 1000UF, Z, 50V	1	
C9071-75	ECJ1VF1A105Z	C 1UF, Z, 10V	5	
C9076	ECJ1XB1H102K	C 1000UF, Z, 50V	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C9077-79	ECJ1VF1H103Z	C 0.01UF, Z, 50V	3	
C9081	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9082-87	ECJ1VF1A105Z	C 1UF, Z, 10V	6	
C9088	ECJ1XC1H470J	C 47PF, J, 50V	1	
C9089-91	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C9092	ECJ1VF1H103Z	C 0.01UF, Z, 50V	1	
C9093	ECJ3YB0J335K	C 33UF, J, 25V	1	
C9096	EEVHB0G101	E 100UF 4V	1	
C9097	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9099-07	ECJ1VF1A105Z	C 1UF, Z, 10V	9	
C9109	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9110	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9111	EEVHB0J470	E 47UF, 6.3V	1	
C9112	EEVHB0G101	E 100UF 4V	1	
C9114	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9115	ECJ1XB0J105K	C 1UF, K, 16V	1	
C9116	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9117,18	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C9119	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9120	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9122	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9123	ECJ1XC1H220J	C 22PF, J, 50V	1	
C9124	ECJ1XB0J105K	C 1UF, K, 16V	1	
C9125	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9126	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9127	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9128,29	ECJ1VF1A105Z	C 1UF, Z, 10V	2	
C9130,31	ECJ1XB1C104K	C 0.1UF, Z, 16V	2	
C9133	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9134	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9135-40	ECJ1VF1A105Z	C 1UF, Z, 10V	6	
C9141	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9142	EEVHB1C100	E 10UF, 16V	1	
C9143-46	ECJ1VF1A105Z	C 1UF, Z, 10V	4	
C9147	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9148	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9149	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9150-54	ECJ1VF1A105Z	C 1UF, Z, 10V	5	
C9155	EEVHB0G221	E 220UF, 4V	1	
C9156-64	ECJ1VF1A105Z	C 1UF, Z, 10V	9	
C9165	ECJ1VC1H560J	C 56PF, J, 50V	1	
C9166-68	ECJ1XF1C104Z	C 0.1UF, Z, 16V	3	
C9169	EEVHB0G101	E 100UF 4V	1	
C9170	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9174	EEVHB1C100	E 10UF, 16V	1	
C9175	ECJ1VC1H560J	C 56PF, J, 50V	1	
C9176	EEVHB1C100	E 10UF, 16V	1	
C9178	EEVHB0G101	E 100UF 4V	1	
C9180	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9181	EEVHB0G101	E 100UF 4V	1	
C9182	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9183	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9184	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9185,86	ECJ1XC1H101J	C 100PF, J, 50V	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C9188	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9190	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9191,92	ECJ1XC1H330J	C 33PF, J, 50V	2	
C9193	EEVHB0G101	E 100UF 4V	1	
C9196,97	ECJ1VB1H103K	C 0.01UF, K, 50V	2	
C9199	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9201	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9204	ECJ1XC1H150J	C 15PF, J, 50V	1	
C9205	ECJ1XC1H180J	C 18PF, J, 50V	1	
C9206	ECJ1XC1H151J	C 150PF, J, 50V	1	
C9207-09	ECJ1XB1C104K	C 0.1UF, Z, 16V	3	
C9211	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9212	ECJ1VF1A105Z	C 1UF, Z, 10V	1	
C9213	EEVHB1C100	E 10UF, 16V	1	
C9214-16	EEVHB0G101	E 100UF 4V	3	
C9219	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9221	ECJ1XF1C104Z	C 0.1UF, Z, 16V	1	
C9224	ECJ1XC1H680J	C 68PF, J, 50V	1	
C9225	ECJ1XB0J105K	C 1UF, K, 16V	1	
C9228	F1J1A1050020	C 1UF, Z, 50V	1	
C9229	ECJ1XB0J105K	C 1UF, K, 16V	1	
C9230	ECJ1XB1C104K	C 0.1UF, Z, 16V	1	
C9299	EEVHP1C100R	E 10UF, 16V	1	
D201,02	MAZ8043M	ZENER DIODE	2	
D203	B3CKE0000006	DIODE	1	
D204,05	MAZ8043M	ZENER DIODE	2	
D601	MA728	DIODE	1	MA2J728
D603,04	B0JCPD000012	DIODE	2	
D609-14	MA111	DIODE	6	MA2J111
D660,61	MA111	DIODE	2	MA2J111
D801	M1FS4	DIODE	1	
D802,03	MA111	DIODE	2	MA2J111
D804	MA8110M	ZENER DIODE	1	MAZ81100M
D806	M1FS4	DIODE	1	
D809	MA111	DIODE	1	MA2J111
D810	MA8062L	ZENER DIODE	1	MAZ80620L
D811,12	M1FS4	DIODE	2	
D813	MA8056-M	DIODE	1	MAZ80560M
D814,15	MA111	DIODE	2	MA2J111
D816	MA8056-M	DIODE	1	MAZ80560M
D817	MA111	DIODE	1	MA2J111
D818	MA8027H	ZENER DIODE	1	MAZ80270H
D851	MA720	DIODE	1	MA3X720
D852	MA111	DIODE	1	MA2J111
D871	B0HCMM000009	DIODE	1	
D872	M1FS4	DIODE	1	
D873	MA111	DIODE	1	MA2J111
D874	MA8130H	ZENER DIODE	1	MAZ81300H
D891,94	B0HCMM000009	DIODE	2	
D891	M1FS4	DIODE	1	
D892	MA8130LTX	ZENER DIODE	1	MAZ81300LL
D893	MA111	DIODE	1	MA2J111
D895-97	B0HCMM000009	DIODE	3	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D2001	M1FS4	DIODE	1	
D2002	MA111	DIODE	1	MA2J111
D2003	MA152	DIODE	1	
D2004	MA157A	DIODE	1	MA3X157A
D2005	MA111	DIODE	1	MA2J111
D2006,07	MA8140M	ZENER DIODE	2	MAZ81400M
D2008	MA152	DIODE	1	
D2200	M1FS4	DIODE	1	
D3001-03	MA8056-M	DIODE	3	MAZ80560M
D3004	MA728	DIODE	1	MA2J728
D4001,02	MA8140M	ZENER DIODE	2	MAZ81400M
D4116	MA152K	DIODE	1	MA3X152K
D9001-07	MA8056-M	DIODE	7	MAZ80560M
DG1	K1MN50A00005	50P CONNECTOR	1	
DG2	K1MN25A00030	25P CONNECTOR	1	
DG3	K1MN21A00028	21P CONNECTOR	1	
DG4	K1KA13A00122	13P CONNECTOR	1	
DG1001	K1KA12A00227	12P CONNECTOR	1	
DG6900	TJSF52250	1P CONNECTOR	1	K1MN50B00005
DL1001-03	ELKE103FA	NOISE FILTER	3	
DL1050,51	J0HABB000003	LC FILTER	2	
DL1070-77	ELKE103FA	NOISE FILTER	8	
DL6900-11	J0HABB000008	LC FILTER	12	
DL6912	J0HAAB000010	LC FILTER	1	
DL6913-24	J0HABB000008	LC FILTER	12	
DL9001-06	J0HABB000004	LC FILTER	6	
IC601	C0JBAZ002057	IC	1	
IC602	C0ABCA000064	IC	1	
IC801	C0DBCFG00004	IC	1	
IC802	PQ1CZ21H2ZP	IC	1	C0DBCMG00001
IC803	AN77L08M	IC	1	
IC805-07	PQ1CZ21H2ZP	IC	3	C0DBCMG00001
IC851	C0DBAMA00014	IC	1	
IC871	PQ1CZ21H2ZP	IC	1	C0DBCMG00001
IC890	PQ1CZ21H2ZP	IC	1	C0DBCMG00001
IC1001	C2CBYF000028	IC	1	
IC1002	C0EBE0000191	IC	1	
IC1003	C0JBBZ000281	IC	1	
IC1004	TVRN173	IC	1	
IC1006	C0JBAB000591	IC	1	
IC1007	C0JBAE000231	IC	1	
IC1008	TVRN045-1	IC	1	
IC1009	C3ABPG000102	IC	1	
IC2001	C1BA00000344	AUDIO AMP	1	
IC2200	LA4901	IC	1	C1BA00000278
IC2501	C1AB00001584	IC	1	
IC3001	TVRN174	IC	1	
IC3002	C2CBJG000331	IC	1	
IC3003	M51957BFP	LINEAR IC	1	C0EBB0000024
IC4001	CXA2069Q	LINEAR IC	1	C1AB00000459
IC4002	C0ABBA000138	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC4110	C0JBAS000185	IC	1	
IC6001,02	C0CBCBD00005	IC	2	
IC6003	C1AB00001834	IC	1	
IC6004	C1ZBZ0002178	IC	1	
IC9001	C1AB00001826	IC	1	
IC9002	C0JBBZ000281	IC	1	
IC9003,04	C0CBCBD00005	IC	2	
IC9006	C3HBKZ000001	IC	1	
IC9007	C1AB00001834	IC	1	
IC9008	MM1065ZMR	LINEAR IC	1	C0CBABB00029
IC9009,10	C0CBCAD00006	IC	2	
IC9012	TC7WU04FU	IC	1	C0JBAB000339
JK801	K2EE2B000003	PLUG	1	
JK4000	K1FB121B0011	CONNECTOR	1	
JK4001	K2HA612B0034	JACK	1	
JK4002	K1CB211B0001	CONNECTOR	1	
JK4003	K1FB121B0011	CONNECTOR	1	
JK4004	K2HC103B0151	JACK	1	
JS600-04	ERJ6GEY0R00	M 0 OHM, 1/10W	5	
JS800-08	ERJ6GEY0R00	M 0 OHM, 1/10W	9	
JS810-16	ERJ6GEY0R00	M 0 OHM, 1/10W	7	
JS1052-62	ERJ6GEY0R00	M 0 OHM, 1/10W	11	
JS1082,83	ERJ6GEY0R00	M 0 OHM, 1/10W	2	
JS2000-02	ERJ6GEY0R00	M 0 OHM, 1/10W	3	
JS2008,09	ERJ6GEY0R00	M 0 OHM, 1/10W	2	
JS4005,06	ERJ6GEY0R00	M 0 OHM, 1/10W	2	
JS4100	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
JS9012-14	ERJ3GEYJ0R00	M 0 OHM, 1/16W	3	
JS9054-62	ERJ6GEY0R00	M 0 OHM, 1/10W	9	
JS9068-74	ERJ6GEY0R00	M 0 OHM, 1/10W	7	
K1	TJSF18208	8P CONNECTOR	1	K1MN08A00040
L001-03	ELJPA330KF	CHIP INDUCTOR	3	
L601	ELESE330JA	PEAKING COIL	1	
L602	EXCELSR35T	BEAD CHOKE	1	
L603	J0JHC0000001	CHIP INDUCTOR	1	
L604	EXCELSR35T	BEAD CHOKE	1	
L605	J0JHC0000001	CHIP INDUCTOR	1	
L606,07	G0A121ZA0001	CHOKE COIL	2	
L801	TALL08N470KA	INDUCTION COIL	1	G0A470GA0011
L802	TALL08N101KA	INDUCTION COIL	1	G0A101EA0008
L804	TALL08N470KA	INDUCTION COIL	1	G0A470GA0011
L806	TALL08N101KA	INDUCTION COIL	1	G0A101EA0008
L807,08	TALL08N470KA	INDUCTION COIL	2	G0A470GA0011
L809,10	TALL08N101KA	INDUCTION COIL	2	G0A101EA0008
L811	TALL08N470KA	INDUCTION COIL	1	G0A470GA0011
L812	EXCELD35C	BEAD CHOKE	1	
L851	G1C101M00018	INDUCTION COIL	1	
L852	TALL08N330KA	INDUCTION COIL	1	G0A330GA0011
L871	TALL08N470KA	INDUCTION COIL	1	G0A470GA0011
L872	TALL08N101KA	INDUCTION COIL	1	G0A101EA0008

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L890	TALL08N470KA	INDUCTION COIL	1	G0A470GA0011
L891	TALL08N101KA	INDUCTION COIL	1	G0A101EA0008
L1001	G1C4R7M00016	INDUCTION COIL	1	
L1002	ELJPA180KB	CHIP INDUCTOR	1	
L1003	G1C3R3MA0061	INDUCTION COIL	1	
L1004	G1C330K00017	INDUCTOR COIL	1	
L1005	G1C4R7M00016	INDUCTION COIL	1	
L1007	ELJFA8R2KB	CHIP INDUCTOR	1	
L1009	ELJFA4R7KF	CHIP INDUCTOR	1	
L1050	G1C6R8MA0061	INDUCTOR COIL	1	
L2001	TALL08N221KA	INDUCTION COIL	1	G0A221DA0010
L2200	TALL08N221KA	INDUCTION COIL	1	G0A221DA0010
L2501	ELJFA6R8MB	CHIP COIL	1	
L2502	EXCELDR35C	BEAD CHOKE	1	
L2503	ELESE180JA	PEAKING COIL	1	
L2504	G1C330K00017	INDUCTOR COIL	1	
L2505	ELESE330JA	PEAKING COIL	1	
L2506	EXCELDR35C	BEAD CHOKE	1	
L2507	G1C330K00017	INDUCTOR COIL	1	
L3001	G1C100K00020	INDUCTION COIL	1	
L4001	EXC3BB221H	BEAD CHOKE	1	
L4002	G1C330K00017	INDUCTOR COIL	1	
L4004,05	G1C121Z00004	INDUCTOR COIL	2	
L4101	J0JBC0000004	CHIP INDUCTOR	1	
L4102,03	EXC3BB221H	BEAD CHOKE	2	
L4104	J0JBC0000004	CHIP INDUCTOR	1	
L4105,06	J0JHC0000001	CHIP INDUCTOR	2	
L4107	ELESE101JA	PEAKING COIL	1	
L4150	J0JBC0000004	CHIP INDUCTOR	1	
L4151	EXC3BB221H	BEAD CHOKE	1	
L4152	J0JBC0000004	CHIP INDUCTOR	1	
L4153,54	EXC3BB221H	BEAD CHOKE	2	
L6003	TALC325T4R7M	CHIP INDUCTOR COIL	1	G1C4R7MA0063
L6004,05	G1C100KA0008	INDUCTOR COIL	2	
L6006,07	G1C100K00020	INDUCTION COIL	2	
L6900,01	G1C100K00020	INDUCTION COIL	2	
L6902	G1C121Z00004	INDUCTOR COIL	1	
L9001-03	TALC168T6R8K	CHIP INDUCTOR COIL	3	G1C6R8K00005
L9004	TALC325T4R7M	CHIP INDUCTOR COIL	1	G1C4R7MA0063
L9005	TALC168T5R6K	CHIP INDUCTOR COIL	1	G1C5R6K00007
L9008	G1C2R2K00006	INDUCTION COIL	1	
L9009,10	G1C100KA0008	INDUCTOR COIL	2	
L9011,12	TALC325T4R7M	CHIP INDUCTOR COIL	2	G1C4R7MA0063
L9014,15	TALC325T4R7M	CHIP INDUCTOR COIL	2	G1C4R7MA0063
L9016	TALC168T100K	CHIP INDUCTOR COIL	1	G1C100KA0009
L9017-23	TALC325T4R7M	CHIP INDUCTOR COIL	7	G1C4R7MA0063
L9025	J0JGC0000021	CHIP INDUCTOR COIL	1	
L9030	J0JGC0000021	CHIP INDUCTOR COIL	1	
L9031	TALC325T4R7M	CHIP INDUCTOR COIL	1	G1C4R7MA0063
PA601,02	ERBFE4R00U	FUSE	2	
PD1,D2	K1KA03B00065	3P CONNECTOR	2	
PD3	K1MN10A00031	10P CONNECTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
PD5	K1MN21A00028	21P CONNECTOR	1	
PH1,H2	K1KA03B00065	3P CONNECTOR	2	
PH3	K1MN10A00031	10P CONNECTOR	1	
Q201	UN5219	TRANSISTOR	1	
Q202	UN5211	TRANSISTOR	1	UNR5211
Q601,02	B1DBED000001	TRANSISTOR	2	
Q603	2SD601A	TRANSISTOR	1	2SD0601A
Q604	UN2113	TRANSISTOR	1	UNR2113
Q605-08	B1BBFF000003	TRANSISTOR	4	
Q801	B1DDED000003	TRANSISTOR	1	
Q802	2SD601A	TRANSISTOR	1	2SD0601A
Q803	UN5211	TRANSISTOR	1	UNR5211
Q804	2SB709A	TRANSISTOR	1	2SB0709A
Q805	B1DDED000003	TRANSISTOR	1	
Q806,07	2SD601A	TRANSISTOR	2	2SD0601A
Q808	UN5211	TRANSISTOR	1	UNR5211
Q809	B1DDED000003	TRANSISTOR	1	
Q810	UN5211	TRANSISTOR	1	UNR5211
Q811	2SD601A	TRANSISTOR	1	2SD0601A
Q812	UN5211	TRANSISTOR	1	UNR5211
Q813	2SD601A	TRANSISTOR	1	2SD0601A
Q814	UN2113	TRANSISTOR	1	UNR2113
Q851	B1ABPF000005	TRANSISTOR	1	
Q852	UN5211	TRANSISTOR	1	UNR5211
Q1001	UN5111	TRANSISTOR	1	UNR5111
Q1002	UN5211	TRANSISTOR	1	UNR5211
Q1004-06	2SD601A	TRANSISTOR	3	2SD0601A
Q1008,09	2SD601A	TRANSISTOR	2	2SD0601A
Q1011	2SD601A	TRANSISTOR	1	2SD0601A
Q1012	UN5211	TRANSISTOR	1	UNR5211
Q2001-04	UN5211	TRANSISTOR	4	UNR5211
Q2005	2SD1802ST	TRANSISTOR	1	B1BBCF000013
Q2006,07	2SD601A	TRANSISTOR	2	2SD0601A
Q2008	2SB709A	TRANSISTOR	1	2SB0709A
Q2009	2SD601A	TRANSISTOR	1	2SD0601A
Q2010	2SB709A	TRANSISTOR	1	2SB0709A
Q2102,03	2SD601A	TRANSISTOR	2	2SD0601A
Q2200	2SD1802ST	TRANSISTOR	1	B1BBCF000013
Q2501,02	UN5211	TRANSISTOR	2	UNR5211
Q2504	UN5211	TRANSISTOR	1	UNR5211
Q2506	UN5211	TRANSISTOR	1	UNR5211
Q3001-04	UN5211	TRANSISTOR	4	UNR5211
Q4001	2SD601A	TRANSISTOR	1	2SD0601A
Q4002,03	UN5211	TRANSISTOR	2	UNR5211
Q4011	2SD601A	TRANSISTOR	1	2SD0601A
Q4101,02	2SB709A	TRANSISTOR	2	2SB0709A
Q4150-53	UN5211	TRANSISTOR	4	UNR5211
Q4154,55	2SD601A	TRANSISTOR	2	2SD0601A
Q6004-06	2SB709A	TRANSISTOR	3	2SB0709A
Q6010-12	2SC2412K	TRANSISTOR	3	
Q6014	B1DHDC000021	TRANSISTOR	1	
Q6015	UN5211	TRANSISTOR	1	UNR5211

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q6900	B1DHDC000021	TRANSISTOR	1	
Q6901	UN5211	TRANSISTOR	1	UNR5211
Q9001-03	2SC2412K	TRANSISTOR	3	
Q9004-06	2SB709A	TRANSISTOR	3	2SB0709A
Q9010-12	2SC2412K	TRANSISTOR	3	
Q9014,15	2SD601A-R	TRANSISTOR	2	2SD0601AR
Q9017	2SB709A	TRANSISTOR	1	2SB0709A
Q9019-21	2SB709A	TRANSISTOR	3	2SB0709A
Q9022	2SD601A-R	TRANSISTOR	1	2SD0601AR
Q9026	2SD1030	TRANSISTOR	1	
Q9029	B1DHDC000021	TRANSISTOR	1	
Q9030	UN5211	TRANSISTOR	1	UNR5211
Q9031	B1DHDC000021	TRANSISTOR	1	
Q9032	UN5211	TRANSISTOR	1	UNR5211
R001	ERJ6GEYJ393	M 39KOHM,J,1/10W	1	
R002	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R003	ERJ6GEYJ393	M 39KOHM,J,1/10W	1	
R004,05	ERJ6GEYJ101	M 100 OHM,J,1/10W	2	
R006	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R101	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R102	ERJ6ENF6801	M 6.8KOHM, 1/10W	1	
R103	ERJ6ENF1202	M 12KOHM, 1/10W	1	
R104	ERJ6ENF2202	M 2.2KOHM, 1/10W	1	
R105	ERJ6ENF6802	M 68KOHM, 1/10W	1	
R201	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	1	
R202	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R203,04	ERJ6GEYJ470	M 47 OHM,J,1/10W	2	
R206,07	ERJ8ENF1021	M1.02KOHM, 1/8W	2	
R208,09	ERJ8ENF2151	M2.15KOHM, 1/8W	2	
R601	ERJ6GEYJ101	M 100 OHM,J,1/10W	1	
R602	ERJ6GEYJ220	M 22 OHM,J,1/10W	1	
R603,04	ERJ6GEYJ180	M 18 OHM,J,1/10W	2	
R605	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R606	ERJ6GEYJ331	M 330 OHM,J,1/10W	1	
R608	ERJ6GEYJ123	M 12KOHM,J,1/10W	1	
R609	ERJ6ENF1003	M 100KOHM, 1/10W	1	
R610,11	ERJ6ENF4321	M4.32KOHM, 1/10W	2	
R612	ERJ6ENF6491	M6.49KOHM, 1/10W	1	
R614	ERJ6ENF4321	M4.32KOHM, 1/10W	1	
R615,16	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	2	
R617,18	ERJ12YJ102	M 1KOHM,J, 1/2W	2	
R619	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R622	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R623	ERJ12YJ102	M 1KOHM,J, 1/2W	1	
R625	ERJ12YJ102	M 1KOHM,J, 1/2W	1	
R627,28	ERJ12YK3R3	M 3.3OHM,J, 1/2W	2	
R629	ERJ6ENF4321	M4.32KOHM, 1/10W	1	
R630,31	ERJ12YK3R3	M 3.3OHM,J, 1/2W	2	
R632	ERJ6ENF6341	M6.34KOHM, 1/10W	1	
R633,34	ERJ12NF2200	M 200 OHM, , 1/2W	2	
R635	ERJ6ENF4321	M4.32KOHM, 1/10W	1	
R636	ERJ6ENF6341	M6.34KOHM, 1/10W	1	
R637	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R638	ERJ12YJ103	M 10KOHM,J, 1/2W	1	ERJ12YJ103U
R660,61	ERJ12NF2000	M 20 OHM, , 1/2W	2	
R801	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R802	ERJ6GEYJ153	M 15KOHM,J,1/10W	1	
R803	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R804	ERJ6ENF1781	M1.78KOHM, 1/10W	1	
R805	ERJ6ENF1102	M 11KOHM, 1/10W	1	
R806	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	1	
R807	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R808	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R809	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R810	ERJ6GEYJ153	M 15KOHM,J,1/10W	1	
R811	ERJ6GEYJ473	M 47KOHM,J,1/10W	1	
R812	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R813,14	ERJ6GEYJ473	M 47KOHM,J,1/10W	2	
R815	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	1	
R817	ERJ6ENF1001	M 1KOHM, 1/10W	1	
R818	ERJ6GEYJ473	M 47KOHM,J,1/10W	1	
R820	ERJ6ENF3001	M 3KOHM, 1/10W	1	
R821,22	ERJ6ENF1001	M 1KOHM, 1/10W	2	
R823	ERJ6GEYJ473	M 47KOHM,J,1/10W	1	
R824	ERJ6ENF1151	M1.15KOHM, 1/10W	1	
R825	ERJ6GEYJ473	M 47KOHM,J,1/10W	1	
R826	ERJ6ENF1691	M1.69KOHM, 1/10W	1	
R843	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R844	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R845	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R846	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R847	ERJ6GEYJ153	M 15KOHM,J,1/10W	1	
R851	ERJ6ENF8203	M 820KOHM, 1/10W	1	
R852	ERJ6ENF1372	M13.7KOHM, 1/10W	1	
R853	ERJ6GEYJ512	M 5.1KOHM,J,1/10W	1	
R854	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R860	ERJ6GEYJ514	M 510KOHM,J,1/10W	1	
R561	ERJ6GEYJ273	M 27KOHM,J,1/10W	1	
R861	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	1	
R862	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R863	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R871	ERJ6ENF2371	M2.37KOHM, 1/10W	1	
R872	ERJ6ENF1872	M18.7KOHM, 1/10W	1	
R873	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R891	ERJ6ENF1001	M 1KOHM, 1/10W	1	
R892	ERJ6ENF7681	M7.68KOHM, 1/10W	1	
R894	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R1001	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1002	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1003	ERJ3GEYJ683	M 68KOHM,J,1/16W	1	
R1004	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1005	ERJ3GEYJ512	M 5.1KOHM,J,1/16W	1	
R1006,07	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R1008	ERJ3GEYJ683	M 68KOHM,J,1/16W	1	
R1009	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1011,12	EXB38V680J	RESISTOR ARRAY	2	
R1015	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1016	EXB38V680J	RESISTOR ARRAY	1	
R1018	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1019	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1020	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1023	ERJ3GEYJ225V	M 2.2MOHM,J,1/16W	1	
R1024	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	1	
R1027	EXB38V680J	RESISTOR ARRAY	1	
R1028	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R1029	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R1031	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R1033	ERJ3GEYJ273	M 27KOHM,J,1/16W	1	
R1034	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1035	EXB38V680J	RESISTOR ARRAY	1	
R1036	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1038	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R1040	ERJ3GEYJ220	M 22 OHM,J,1/16W	1	
R1042	EXB38V680J	RESISTOR ARRAY	1	
R1043	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1045	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1046	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	D0GB391JA002
R1047	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1048	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1049	EXB38V680J	RESISTOR ARRAY	1	
R1050	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R1051	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1052	ERJ3GEYJ471	M 470 OHM,J,1/16W	1	
R1053	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1054	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R1055	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1056	EXB38V680J	RESISTOR ARRAY	1	
R1057	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R1058	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R1061	ERJ3GEYJ224	M 220KOHM,J,1/16W	1	
R1062	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1063	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R1064	EXB38V680J	RESISTOR ARRAY	1	
R1065-67	ERJ3GEYJ101	M 100 OHM,J,1/16W	3	D0GB101JA002
R1068,69	ERJ3GEYJ473	M 47KOHM,J,1/16W	2	
R1070	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1073,74	ERJ3GEYJ473	M 47KOHM,J,1/16W	2	
R1075	ERJ3GEYJ273	M 27KOHM,J,1/16W	1	
R1076	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1077	ERJ3GEYJ183	M 18KOHM,J,1/16W	1	
R1078	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1079	ERJ3GEYJ183	M 18KOHM,J,1/16W	1	
R1080	EXB38V680J	RESISTOR ARRAY	1	
R1081,82	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	D0GB101JA002
R1083	EXB38V680J	RESISTOR ARRAY	1	
R1085	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1086,87	ERJ3GEYJ273	M 27KOHM,J,1/16W	2	
R1088	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R1089-92	ERJ3GEYJ273	M 27KOHM,J,1/16W	4	
R1093	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	1	
R1094	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1096,97	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	D0GB101JA002
R1099	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R1101	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R1102	EXB38V473J	RESISTOR ARRAY	1	
R1105	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R1107	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1111	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	1	
R1112,13	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R1114	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R1116	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R1117	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R1118,19	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	D0GB101JA002
R1120	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R1196	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R2001	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R2003	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R2005,06	ERJ6GEYJ100	M 10 OHM,J,1/10W	2	
R2007,08	ERJ12YJ2R2	M 2.2 OHM, J,1/2W	2	
R2009	ERJ6GEYJ270	M 27 OHM,J,1/10W	1	
R2010,11	ERJ12YJ2R2	M 2.2 OHM, J,1/2W	2	
R2012	ERJ6GEYJ104	M 100KOHM,J,1/10W	1	
R2013	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R2014	ERJ6GEYJ152	M 1.5KOHM,J,1/10W	1	
R2015	ERJ6GEYJ184	M 180KOHM,J,1/10W	1	
R2016	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R2017	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R2018	ERJ6GEYJ104	M 100KOHM,J,1/10W	1	
R2019	ERJ6GEYJ105	M 1MOHM,J,1/10W	1	
R2020	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R2021	ERJ6GEYJ223	M 22KOHM,J,1/10W	1	
R2022	ERJ6GEYJ473	M 47KOHM,J,1/10W	1	
R2101	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R2104,05	ERJ6GEYJ332	M 3.3KOHM,J,1/10W	2	
R2108	ERJ6GEYJ122	1.2KOHM,J,1/10W	1	
R2109	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R2110	ERJ6GEYJ561	M 560 OHM,J,1/10W	1	
R2111	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R2113	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R2200	ERJ6GEYJ104	M 100KOHM,J,1/10W	1	
R2201	ERJ6GEYJ203	M 20KOHM,J,1/10W	1	
R2202	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	1	
R2203	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R2204	ERJ6GEYJ270	M 27 OHM,J,1/10W	1	
R2205,06	ERJ12YJ2R2	M 2.2 OHM, J,1/2W	2	
R2501	ERJ6GEYJ101	M 100 OHM,J,1/10W	1	
R2502	ERJ6GEYJ471	M 470 OHM,J,1/10W	1	
R2505,06	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	2	
R2507,08	ERJ6GEYJ101	M 100 OHM,J,1/10W	2	
R2509,10	ERJ6GEYJ273	M 27KOHM,J,1/10W	2	
R2511-14	ERJ6GEYJ101	M 100 OHM,J,1/10W	4	
R2515,16	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R2517	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	1	
R2519	ERJ6GEYJ562	M 5.6KOHM,J,1/10W	1	
R2521,22	ERJ6GEYJ104	M 100KOHM,J,1/10W	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2529,30	ERJ6GEYJ104	M 100KOHM,J,1/10W	2	
R2532	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	1	
R3001	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R3002,03	ERJ3GEYJ101	M 100 OHM,J,1/16W	2	D0GB101JA002
R3004,05	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3006-10	ERJ3GEYJ473	M 47KOHM,J,1/16W	5	
R3012	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R3013-20	EXB38V473J	RESISTOR ARRAY	8	
R3021-23	ERJ3GEYJ473	M 47KOHM,J,1/16W	3	
R3024	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R3025-31	ERJ3GEYJ473	M 47KOHM,J,1/16W	7	
R3032,33	EXB38V473J	RESISTOR ARRAY	2	
R3034	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R3035,36	ERJ3GEYJ391	M 390 OHM,J,1/16W	2	D0GB391JA002
R3037	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R3038,39	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3040	ERJ3EKF1272	M12.7KOHM, 1/16W	1	
R3041	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R3042	ERJ3EKF1002	M 10KOHM, 1/16W	1	
R3043,44	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R3045	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R3046	ERJ3GEYJ473	M 47KOHM,J,1/16W	1	
R3047	EXB38V101J	RESISTOR ARRAY	1	
R3048,49	ERJ3GEYJ273	M 27KOHM,J,1/16W	2	
R3050	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R3051	ERJ3GEYJ472	M 4.7KOHM,J,1/16W	1	
R4003	ERJ6ENF75R0	M 75 OHM, 1/10W	1	
R4004,05	ERJ6GEYJ184	M 180KOHM,J,1/10W	2	
R4006,07	ERJ6ENF75R0	M 75 OHM, 1/10W	2	
R4008	ERJ6GEYJ750	M 75 OHM,J,1/10W	1	
R4009	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4010	ERJ6GEYJ302	M 3KOHM,J,1/10W	1	
R4011	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	1	
R4012	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R4013	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R4014	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4015	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R4016	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4017	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R4018,19	ERJ6GEYJ273	M 27KOHM,J,1/10W	2	
R4020,21	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R4022,23	ERJ6GEYJ221	M 220 OHM,J,1/10W	2	
R4025,26	ERJ6GEYJ680	M 68 OHM,J,1/10W	2	
R4027-31	ERJ6GEYJ102	M 1KOHM,J,1/10W	5	
R4038,39	ERJ6GEYJ104	M 100KOHM,J,1/10W	2	
R4071	ERJ6GEYJ393	M 39KOHM,J,1/10W	1	
R4072	ERJ6GEYJ512	M 5.1KOHM,J,1/10W	1	
R4073	ERJ6GEYJ333	M 33KOHM,J,1/10W	1	
R4074	ERJ6GEYJ202	M 2KOHM,J,1/10W	1	
R4075	ERJ6GEYJ103	M 10KOHM,J,1/10W	1	
R4076	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4101-05	ERJ6ENF75R0	M 75 OHM, 1/10W	5	
R4106	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	1	
R4107	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4109,10	ERJ6GEYJ333	M 33KOHM,J,1/10W	2	
R4111	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R4112	ERJ6ENF3301	M 3.3KOHM, 1/10W	1	
R4113	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	1	
R4116	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4117	ERJ6ENF3301	M 3.3KOHM, 1/10W	1	
R4126,27	ERJ6GEYJ104	M 100KOHM,J,1/10W	2	
R4150,51	ERJ6GEYJ333	M 33KOHM,J,1/10W	2	
R4152,53	ERJ6GEYJ104	M 100KOHM,J,1/10W	2	
R4154	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	1	
R4155,56	ERJ6GEYJ221	M 220 OHM,J,1/10W	2	
R4157	ERJ6GEYJ682	M 6.8KOHM,J,1/10W	1	
R4158	ERJ6GEYJ472	M 4.7KOHM,J,1/10W	1	
R4159,60	ERJ6ENF75R0	M 75 OHM, 1/10W	2	
R4163	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R4167-69	ERJ6GEYJ221	M 220 OHM,J,1/10W	3	
R4170	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R4171,72	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R4173	ERJ6GEYJ221	M 220 OHM,J,1/10W	1	
R4174	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R4177	ERJ6GEYJ182	M 1.8KOHM,J,1/10W	1	
R4178	ERJ6GEYJ302	M 3KOHM,J,1/10W	1	
R4179	ERJ6GEYJ102	M 1KOHM,J,1/10W	1	
R4180	ERJ6GEYJ750	M 75 OHM,J,1/10W	1	
R4181,82	ERJ6GEYJ102	M 1KOHM,J,1/10W	2	
R4183,84	ERJ6GEYJ101	M 100 OHM,J,1/10W	2	
R4185,86	ERJ6GEYJ221	M 220 OHM,J,1/10W	2	
R4187	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	1	
R4201	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R6001-04	ERJ3GEYJ0R00	M 0 OHM, 1/16W	4	
R6007	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R6008	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6009	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R6010	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6012	ERJ3GEYJ331	M 330 OHM,J,1/16W	1	
R6016-18	ERJ3GEYJ331	M 330 OHM,J,1/16W	3	
R6019-21	ERJ3GEYJ221	M 220 OHM,J,1/16W	3	
R6023	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6025-27	ERJ3GEYJ0R00	M 0 OHM, 1/16W	3	
R6029-31	ERJ3GEYJ102	M 1KOHM,J,1/16W	3	
R6033	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R6034	ERJ6ENF47R5	M47.5 OHM, 1/10W	1	
R6035,36	ERJ6ENF54R9	M54.9 OHM, 1/10W	2	
R6037	ERJ3EKF3901	M 3.9KOHM, 1/16W	1	
R6038,39	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R6040	ERJ6ENF47R5	M47.5 OHM, 1/10W	1	
R6042	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6044	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6045,46	ERJ6ENF51R0	M0.51KOHM, 1/10W	2	
R6047	ERJ6ENF47R5	M47.5 OHM, 1/10W	1	
R6048	ERJ6ENF54R9	M54.9 OHM, 1/10W	1	
R6049-56	ERJ3GEYJ101	M 100 OHM,J,1/16W	8	D0GB101JA002
R6057	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R6059	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6060	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R6061	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6062	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R6063	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6064	ERJ3GEYJ392	M 3.9KOHM,J,1/16W	1	
R6065	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6066	ERJ3GEYJ104	M 100KOHM,J,1/16W	1	
R6067	ERJ3GEYJ334	M 330KOHM,J,1/16W	1	D0GB334JA002
R6068-71	ERJ3GEYJ0R00	M 0 OHM, 1/16W	4	
R6171	ERJ6GEY0R00	M 0 OHM, 1/10W	1	
R6177,78	ERJ3GEYJ273	M 27KOHM,J,1/16W	2	
R6179	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6180,81	EXB38VR000	RESISTOR ARRAY	2	
R6182	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6184-86	ERJ3GEYJ0R00	M 0 OHM, 1/16W	3	
R6190	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6191-93	ERJ6ENF1000	M 100 OHM, 1/10W	3	
R6194	ERJ6ENF1500	M 150 OHM, 1/10W	1	
R6195	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6294	ERJ3EKF6801	M 6.8KOHM, 1/16W	1	
R6295	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R6901	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R6903	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R6905	ERJ6GEYJ470	M 47 OHM,J,1/10W	1	
R6906-11	EXB38VR000	RESISTOR ARRAY	6	
R9006-11	ERJ3GEYJ331	M 330 OHM,J,1/16W	6	
R9012-14	ERJ3EKF2700	M 270 OHM, 1/16W	3	
R9015-17	ERJ3EKF2200	M 220 OHM, 1/16W	3	
R9021-28	ERJ3GEYJ0R00	M 0 OHM, 1/16W	8	
R9029-31	ERJ3GEYJ331	M 330 OHM,J,1/16W	3	
R9032-34	ERJ3GEYJ221	M 220 OHM,J,1/16W	3	
R9036	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R9038,39	ERJ3GEYJ223	M 22KOHM,J,1/16W	2	
R9040	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9042,43	ERJ3GEYJ221	M 220 OHM,J,1/16W	2	
R9045-47	ERJ3GEYJ221	M 220 OHM,J,1/16W	3	
R9049	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R9050,51	ERJ3GEYJ331	M 330 OHM,J,1/16W	2	
R9053	ERJ3EKF4700	M 470 OHM, 1/16W	1	
R9054	ERJ3EKF2700	M 270 OHM, 1/16W	1	
R9056	ERJ3EKF1200	M 120 OHM, 1/16W	1	
R9058	ERJ3EKF6801	M 6.8KOHM, 1/16W	1	
R9060	ERJ6GEYJ821	M 820 OHM,J,1/10W	1	
R9062	ERJ3EKF2700	M 270 OHM, 1/16W	1	
R9063	ERJ3EKF1201	M 1.2KOHM, 1/16W	1	
R9065,66	ERJ6GEYJ222	M 2.2KOHM,J,1/10W	2	
R9067	ERJ6ENF68R0	M 68 OHM, 1/10W	1	
R9068,69	ERJ6ENF82R0	M 82 OHM, 1/10W	2	
R9070-72	ERJ3GEYJ220	M 22 OHM,J,1/16W	3	
R9073	ERJ6ENF68R0	M 68 OHM, 1/10W	1	
R9075	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9077	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9079,80	ERJ3GEYJ0R00	M 0 OHM, 1/16W	2	
R9082	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R9083	ERJ6ENF51R0	M0.51KOHM, 1/10W	1	
R9084	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R9085	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9086	ERJ3EKF1800	M 180 OHM, 1/16W	1	
R9087	ERJ6ENF51R0	M0.51KOHM, 1/10W	1	
R9088	ERJ6ENF68R0	M 68 OHM, 1/10W	1	
R9089	ERJ6ENF82R0	M 82 OHM, 1/10W	1	
R9090	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R9091	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R9092	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R9093	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9095	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9097,98	ERJ3GEYJ0R00	M 0 OHM, 1/16W	2	
R9100	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R9101	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9102	ERJ3EKF1401	M 1.4KOHM, 1/16W	1	
R9103	ERJ3EKF2000	M 200 OHM, 1/16W	1	
R9104	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R9105	ERJ3EKF47R0	M 47 OHM, 1/16W	1	
R9106	ERJ3GEYJ121	M 120 OHM,J,1/16W	1	
R9107	ERJ3EKF1401	M 1.4KOHM, 1/16W	1	
R9108	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9109	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9110	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R9111	ERJ3EKF75R0	M 0.75HM, 1/16W	1	
R9113	ERJ3EKF1401	M 1.4KOHM, 1/16W	1	
R9114	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R9115	ERJ3GEYJ330	M 33 OHM,J,1/16W	1	
R9116	ERJ3EKF1401	M 1.4KOHM, 1/16W	1	
R9117	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9118	ERJ3EKF75R0	M 0.75HM, 1/16W	1	
R9119	ERJ3GEYJ221	M 220 OHM,J,1/16W	1	
R9121	ERJ3EKF47R0	M 47 OHM, 1/16W	1	
R9122	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R9123	ERJ3EKF75R0	M 0.75HM, 1/16W	1	
R9124	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9125	ERJ3EKF75R0	M 0.75HM, 1/16W	1	
R9126	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R9127	ERJ3EKF1101	M 1.1KOHM, 1/16W	1	
R9128	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R9129	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9130	ERJ3EKF2200	M 220 OHM, 1/16W	1	
R9131	ERJ3GEYJ121	M 120 OHM,J,1/16W	1	
R9132	ERJ3EKF2701	M 2.7KOHM, 1/16W	1	
R9133	ERJ3EKF47R0	M 47 OHM, 1/16W	1	
R9134	ERJ3EKF12R0	M 12 OHM, 1/16W	1	
R9136	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9137,38	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R9139	ERJ3GEYJ121	M 120 OHM,J,1/16W	1	
R9141	ERJ3GEYJ181	M 180 OHM,J,1/16W	1	
R9142	ERJ3GEYJ152	M 1.5KOHM,J,1/16W	1	
R9143	ERJ3GEYJ181	M 180 OHM,J,1/16W	1	
R9144,45	ERJ3GEYJ221	M 220 OHM,J,1/16W	2	
R9146,47	ERJ3GEYJ561	M 560 OHM,J,1/16W	2	

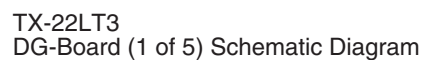
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R9149,50	ERJ3GEYJ0R00	M 0 OHM, 1/16W	2	
R9154	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R9155	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R9156	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R9157	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R9158	ERJ3GEYJ103	M 10KOHM,J,1/16W	1	
R9159	ERJ3GEYJ153	M 15KOHM,J,1/16W	1	
R9161	ERJ3GEYJ223	M 22KOHM,J,1/16W	1	
R9162	ERJ3GEYJ102	M 1KOHM,J,1/16W	1	
R9164,65	ERJ3GEYJ103	M 10KOHM,J,1/16W	2	
R9166-68	ERJ3GEYJ0R00	M 0 OHM, 1/16W	3	
R9170	ERJ3GEYJ121	M 120 OHM,J,1/16W	1	
R9172	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R9190	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9191-93	ERJ6ENF1020	M 105 OHM, 1/10W	3	
R9194	ERJ6ENF1500	M 150 OHM, 1/10W	1	
R9195-97	ERJ3GEYJ0R00	M 0 OHM, 1/16W	3	
R9200	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R9201,02	ERJ3GEYJ220	M 22 OHM,J,1/16W	2	
R9203	ERJ3GEYJ105	M 1MOHM,J,1/16W	1	
R9204	ERJ3GEYJ182	M 1.8KOHM,J,1/16W	1	
R9207	ERJ3GEYJ0R00	M 0 OHM, 1/16W	1	
R9297	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
R9299	ERJ3GEYJ101	M 100 OHM,J,1/16W	1	D0GB101JA002
RM201	PNA4701M05TV	REMOCO RECEIVER	1	
RTL	TXNDG10HNC	CIRCUIT BOAD DG	1	⚠
RTL	TNPH0546	CIRCUIT BOAD A	1	⚠
RTL	TNPA2895	CIRCUIT BOAD B	1	⚠
RTL	TNPA2894	CIRCUIT BOAD K	1	⚠
RTL	TNPA2956	CIRCUIT BOAD V	1	⚠
RTL	TNPA2896	CIRCUIT BOAD PD	1	⚠
RTL	TNPA2897	CIRCUIT BOAD PH	1	⚠
SW101-05	EVQPC105K	SWITCH	5	
SW801	K0F122B00012	SWITCH	1	
T601,02	ETJ23K12AM	INVARTOR TRANS	2	
T660,61	ETJ23K12AM	INVARTOR TRANS	2	
TNR001	ENG27519G	TUNER	1	ENG29519GF ⚠
V1	TJSF18208	8P CONNECTOR	1	K1MN08A00040
X1001	H0J600400006	CRYSTAL	1	
X2501	H0J184500020	CRYSTAL	1	
X3001	TSSA104	CRYSTAL	1	H0J400400006
X9001	H0J202500002	CRYSTAL	1	
ZA007	K4ZZ01000121	EARTH LUG	1	
ZA009,10	K4ZZ01000121	EARTH LUG	2	
ZA601-03	K4ZZ01000121	EARTH LUG	3	

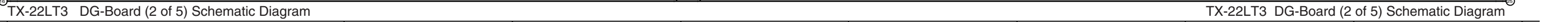
Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
ZA661,62	K4ZZ01000121	EARTH LUG	2	
ZA6001-08	TESA169	SHIELD CLIP	8	
ZA6009-12	K4CD01000002	TERMINAL	4	
ZB001	TMME227	CLAMPER	1	

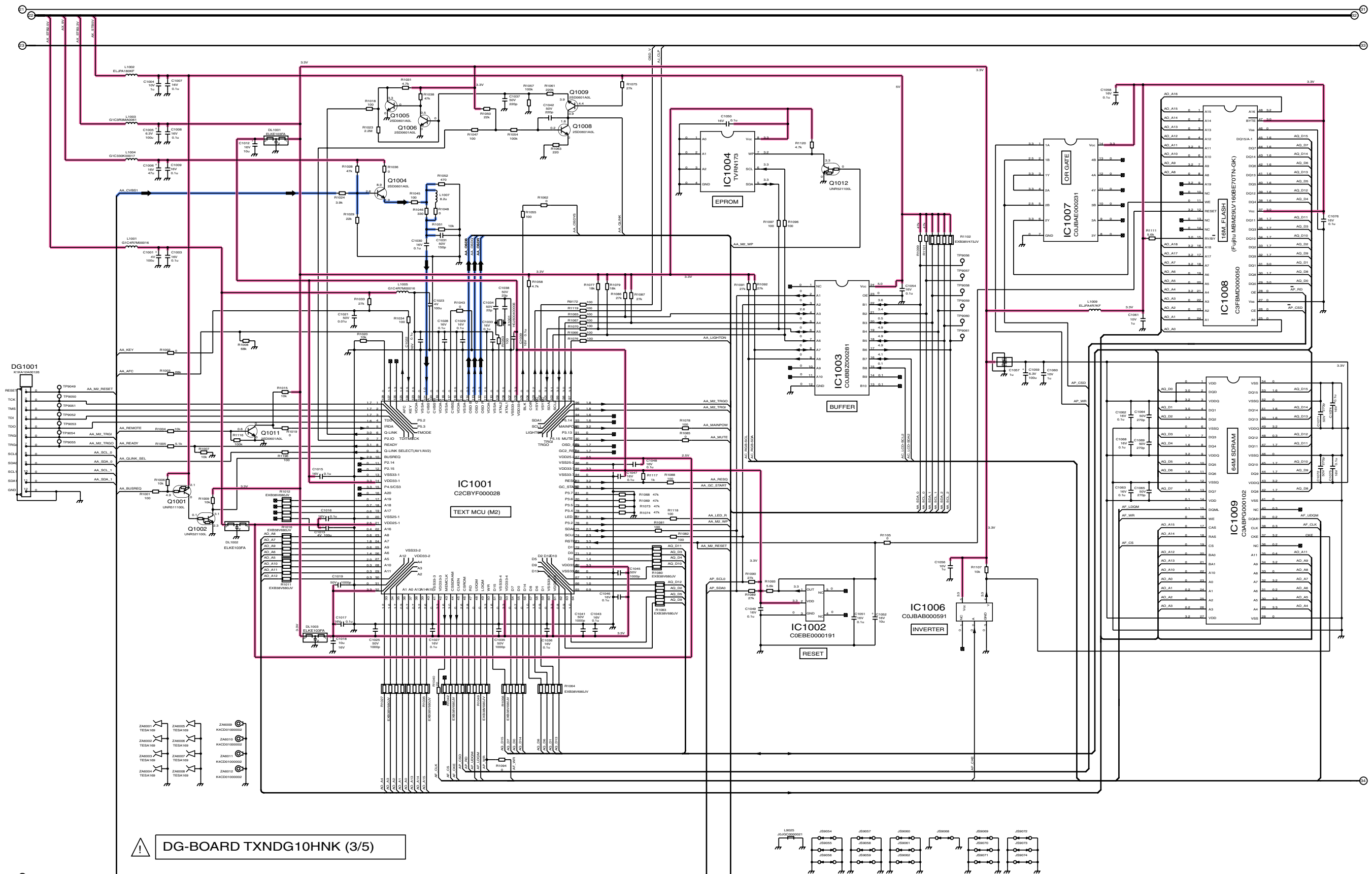
11. Schematic Diagram for printing with A4

12. Cover for printing with A4

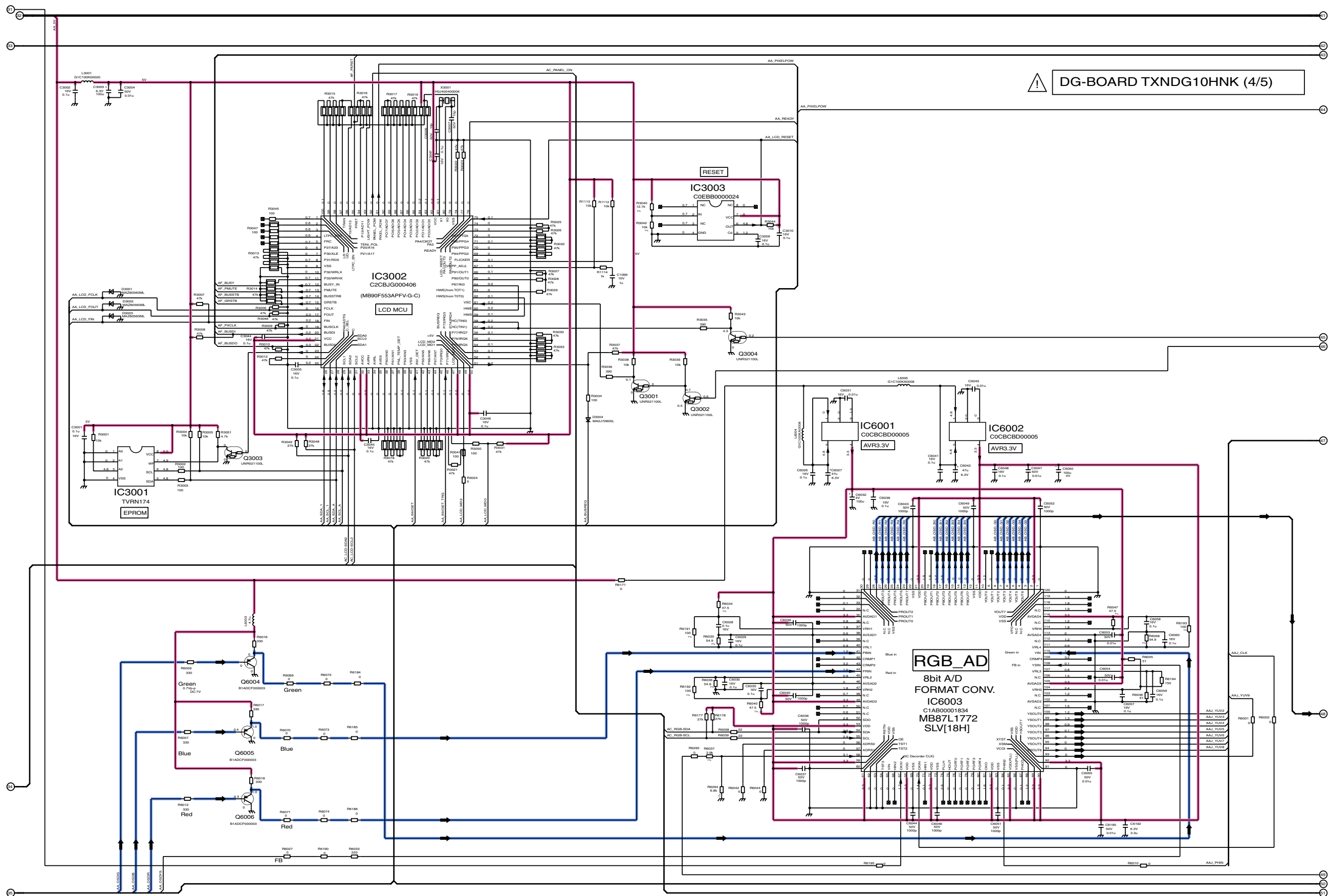
⚠

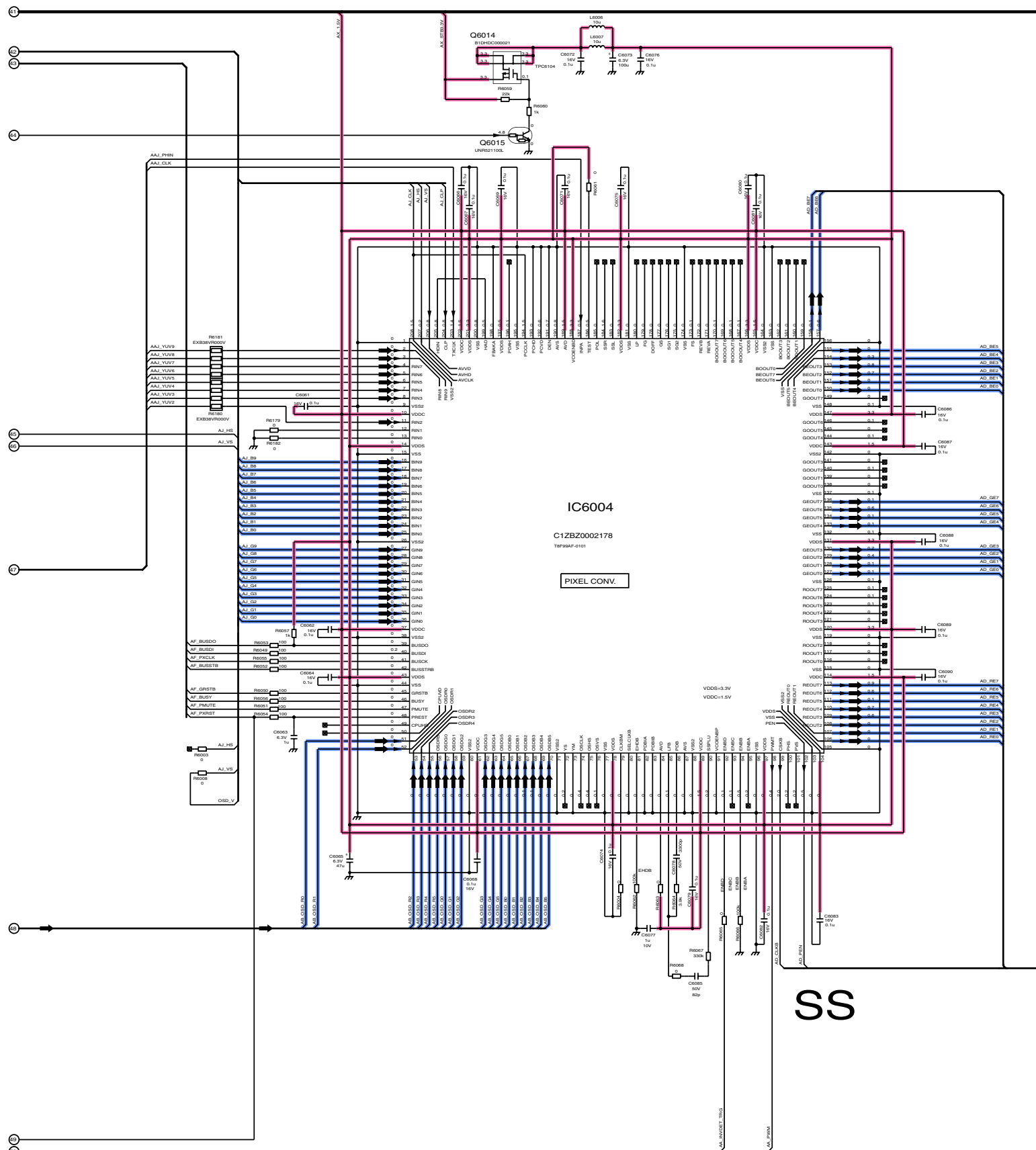




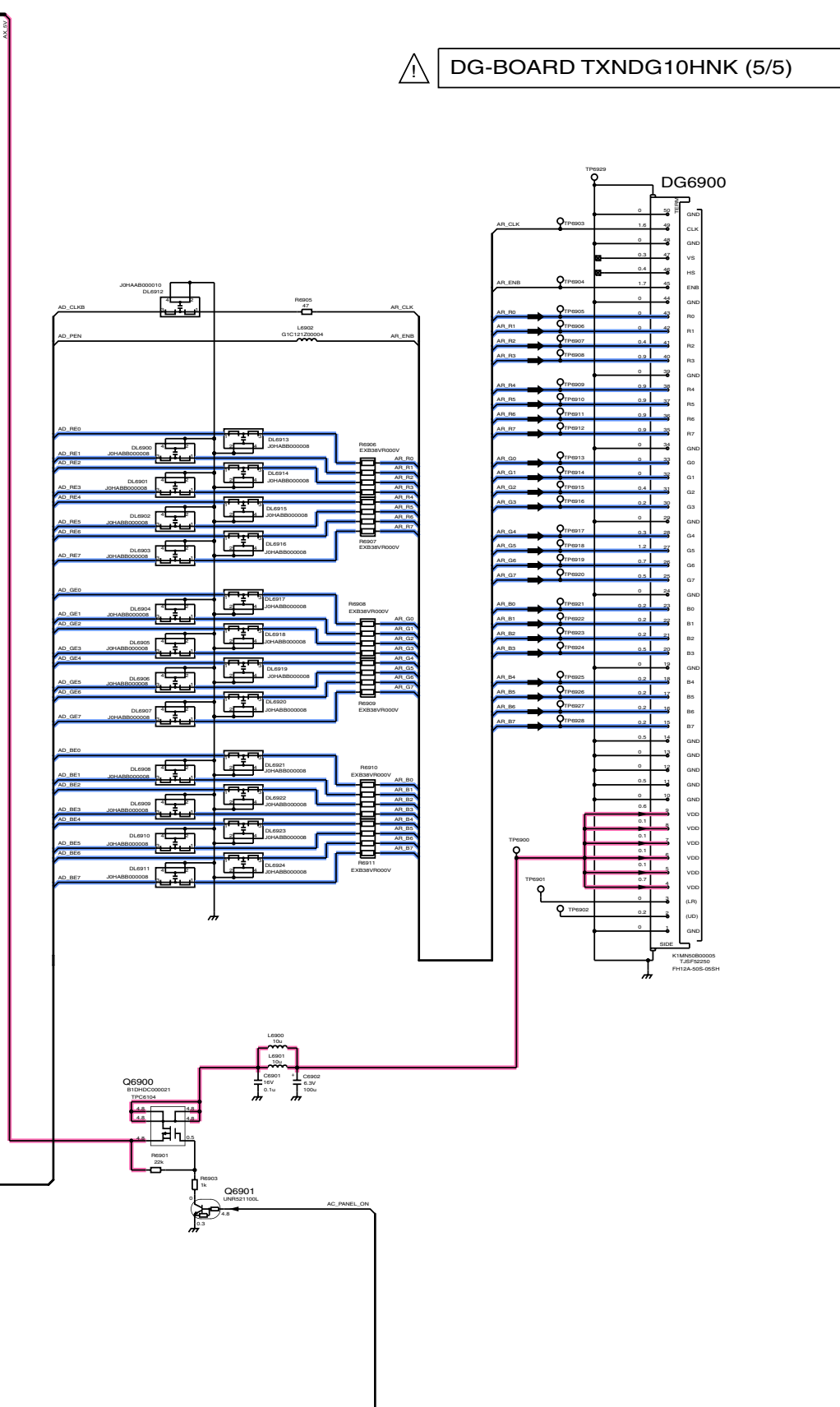


DG-BOARD TXNDG10HNK (3/5)





TX-22LT3 DG-Board (5 of 5) Schematic Diagram



TX-22LT3 DG-Board (5 of 5) Schematic Diagram

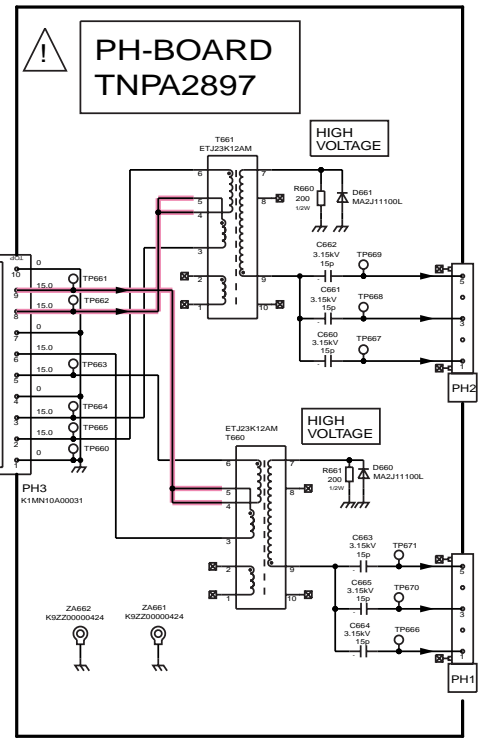
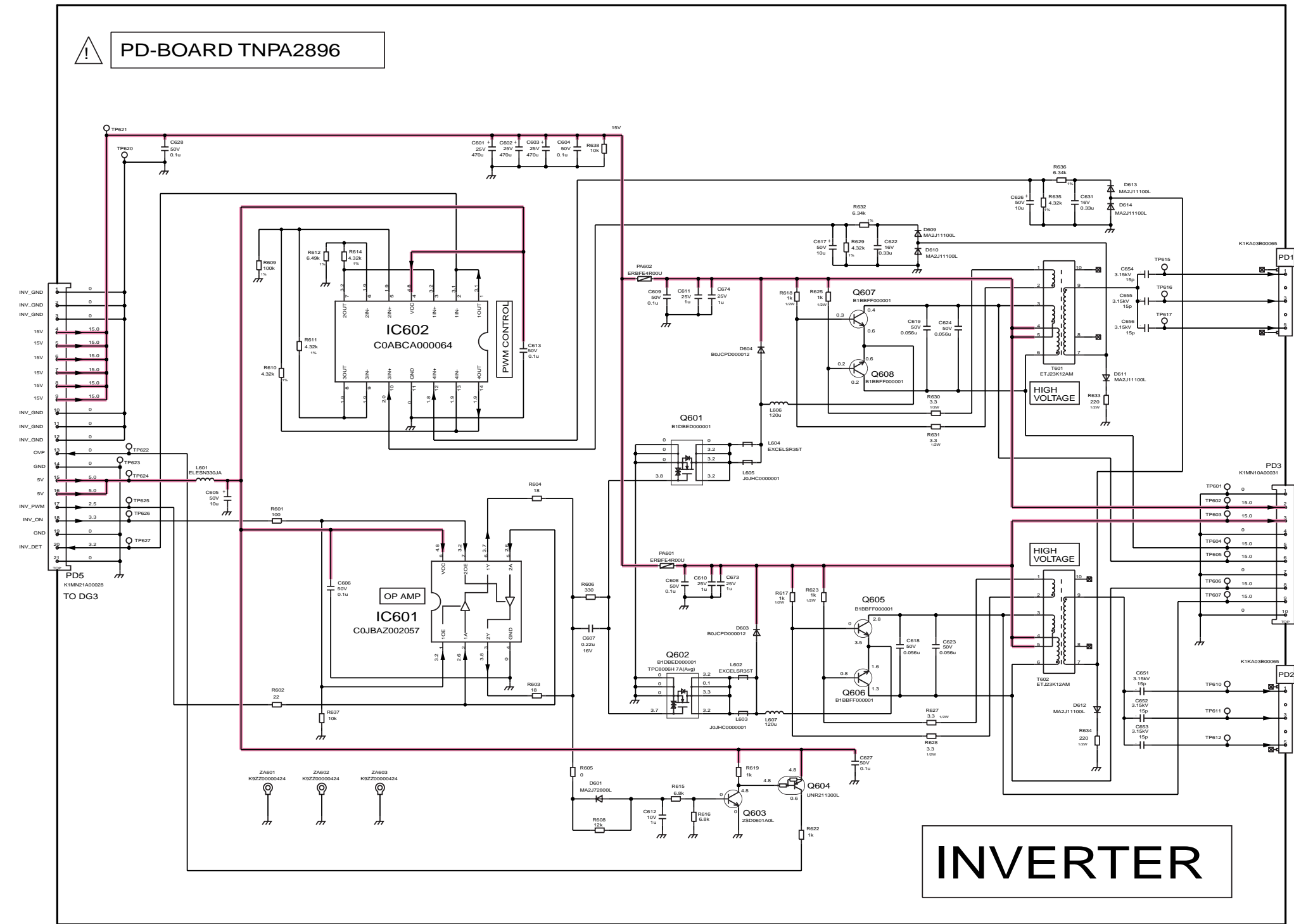
A

B

C

D

E



TX-22LT3
PD-Board and PH-Board Schematic Diagram

TX-22LT3
PD-Board and PH-Board Schematic Diagram



8 Block and Schematic Diagrams

8.1. Schematic Diagram Notes

Important Safety Notice

Components identified by \triangle mark have special characteristics important for safety.
When replacing any of these components, use only manufacture's specified parts.

Notes:

1. Resistor

All resistors are carbon 1/4W resistor, unless marked as follows:

Unit of resistance is OHM [Ω] (K=1,000, M=1,000,000).

\bigcirc	: Nonflammable	\boxtimes	: Metal Oxide
\triangle	: Solid	\odot	: Metal Film
\boxplus	: Wire Wound	\otimes	: Fuse:

2. Capacitor

All capacitors are ceramic 50V capacitor, unless marked as follows:

Unit of capacitance is μ F, unless otherwise noted.

\otimes	: Temperature Compensation	$\begin{array}{c} + \\ \text{---} \text{H} \text{---} \\ \text{NP} \end{array}$: Electrolytic
\textcircled{M}	: Polyester	$\begin{array}{c} \text{---} \text{H} \text{---} \\ \text{NP} \end{array}$: Bipolar
\textcircled{m}	: Metalized Polyester	\textcircled{T}	: Dipped Tantalum
\boxtimes	: Polypropylene	\textcircled{Z}	: Z-Type

3. Coil

Unit of inductance is μ H, unless otherwise noted.

4. Test Point

\bigcirc : Test Point position

5. Earth Symbol

$\text{---} \text{H} \text{---}$: Chassis Earth (Cold) \downarrow : Line Earth (Hot)

6. Voltage Measurement

Voltage is measured by a DC voltmeter.

Conditions of the measurement are the following:

Power Source AC 100-240V, 50/60Hz

Receiving Signal Colour Bar signal (RF)

All customer's controls Maximum positions

7. Number in red circle indicates waveform number.

(See waveform pattern table.)

8. When arrow mark (\nearrow) is found, connection is easily found from the direction of arrow

9. Indicates the major signal flow. : Video \Rightarrow Audio \Rightarrow

10. This schematic diagram is the latest at the time of printing and subject to change without notice.



Remarks:

1. The Power Circuit contains a circuit area which uses a separate power supply to isolate the earth connection.

The circuit is defined by HOT and COLD indications in the schematic diagram. Take the following precautions.

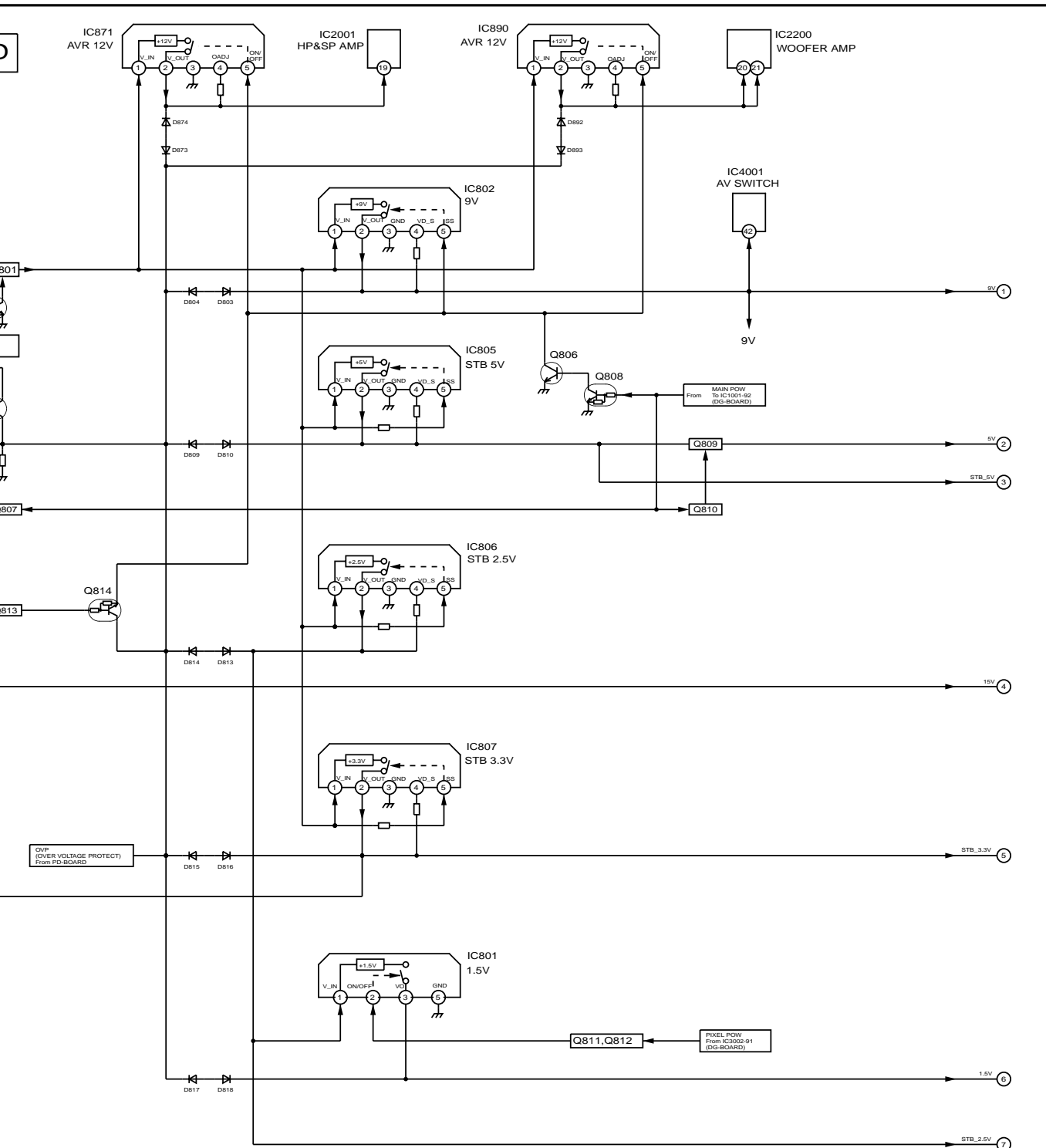
All circuits, except the Power Circuit, are cold.

Precautions

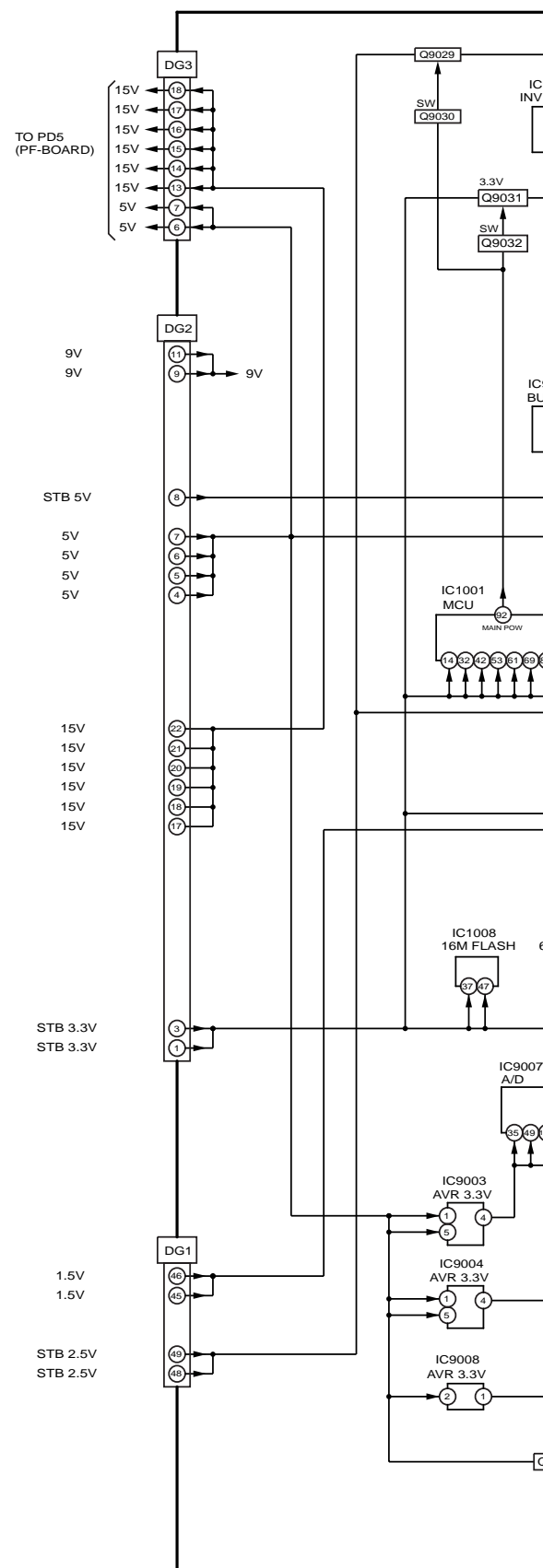
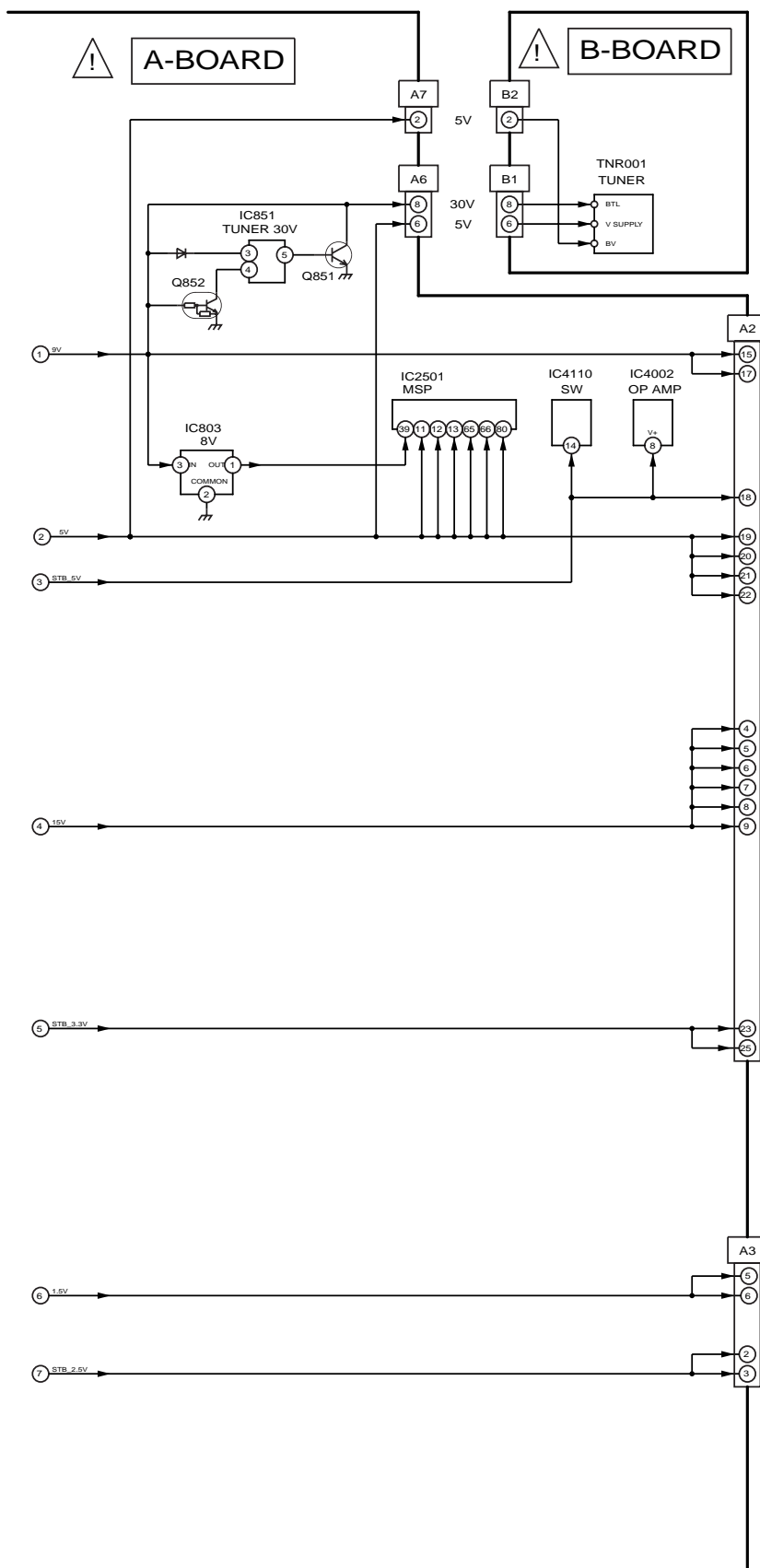
- a. Do not touch the hot part or the hot and cold parts at the same time or you may be shocked.
 - b. Do not short- circuit the hot and cold circuits or a fuse may blow and parts may break.
 - c. Do not connect an instrument, such as an oscilloscope, to the hot and cold circuits simultaneously or a fuse may blow.
Connect the earth of instruments to the earth connection of the circuit being measured.
 - d. Make sure to disconnect the power plug before removing the chassis.
2. Following diodes are interchangeable.
MA150- MA162 (Replacement part)

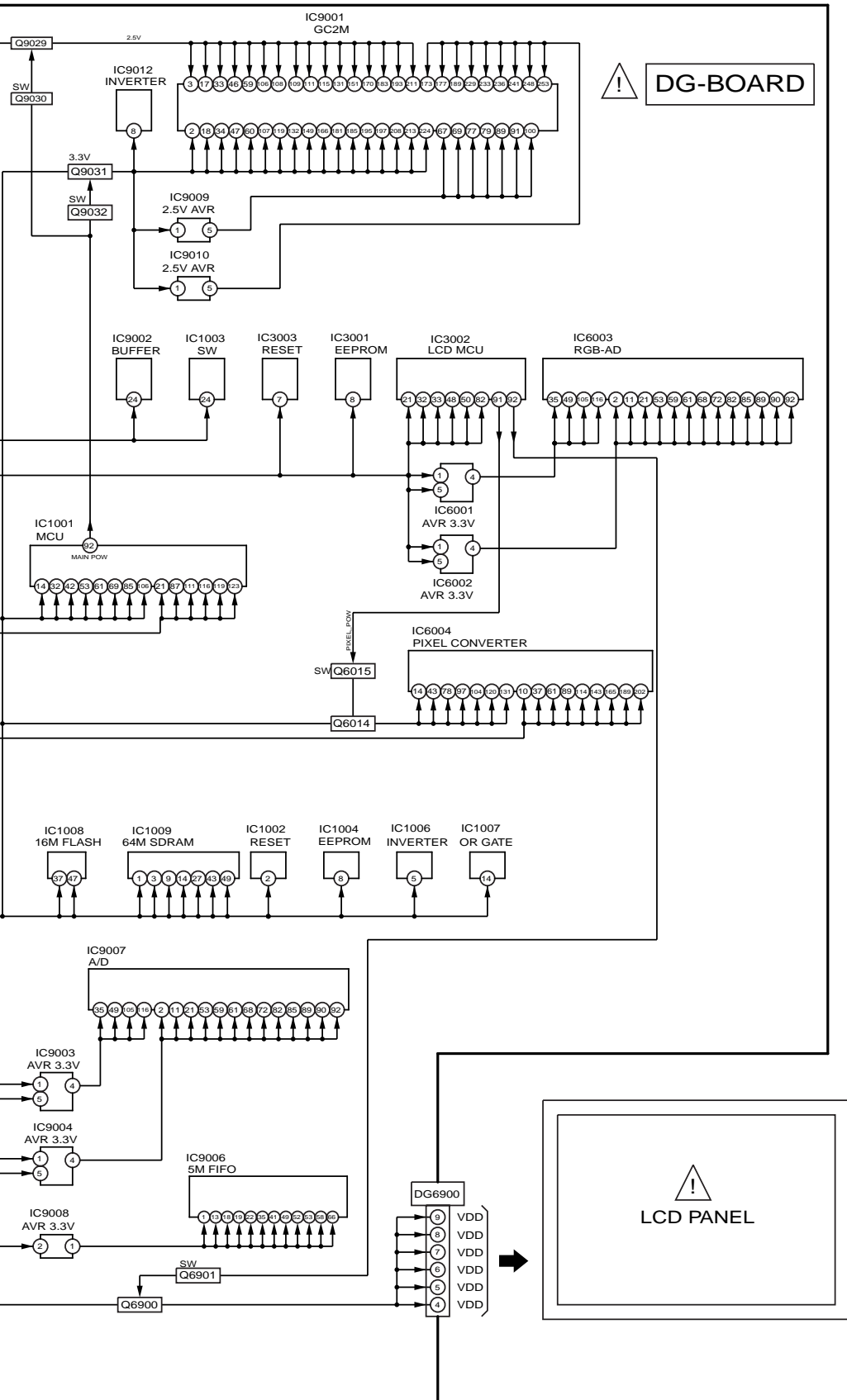


26



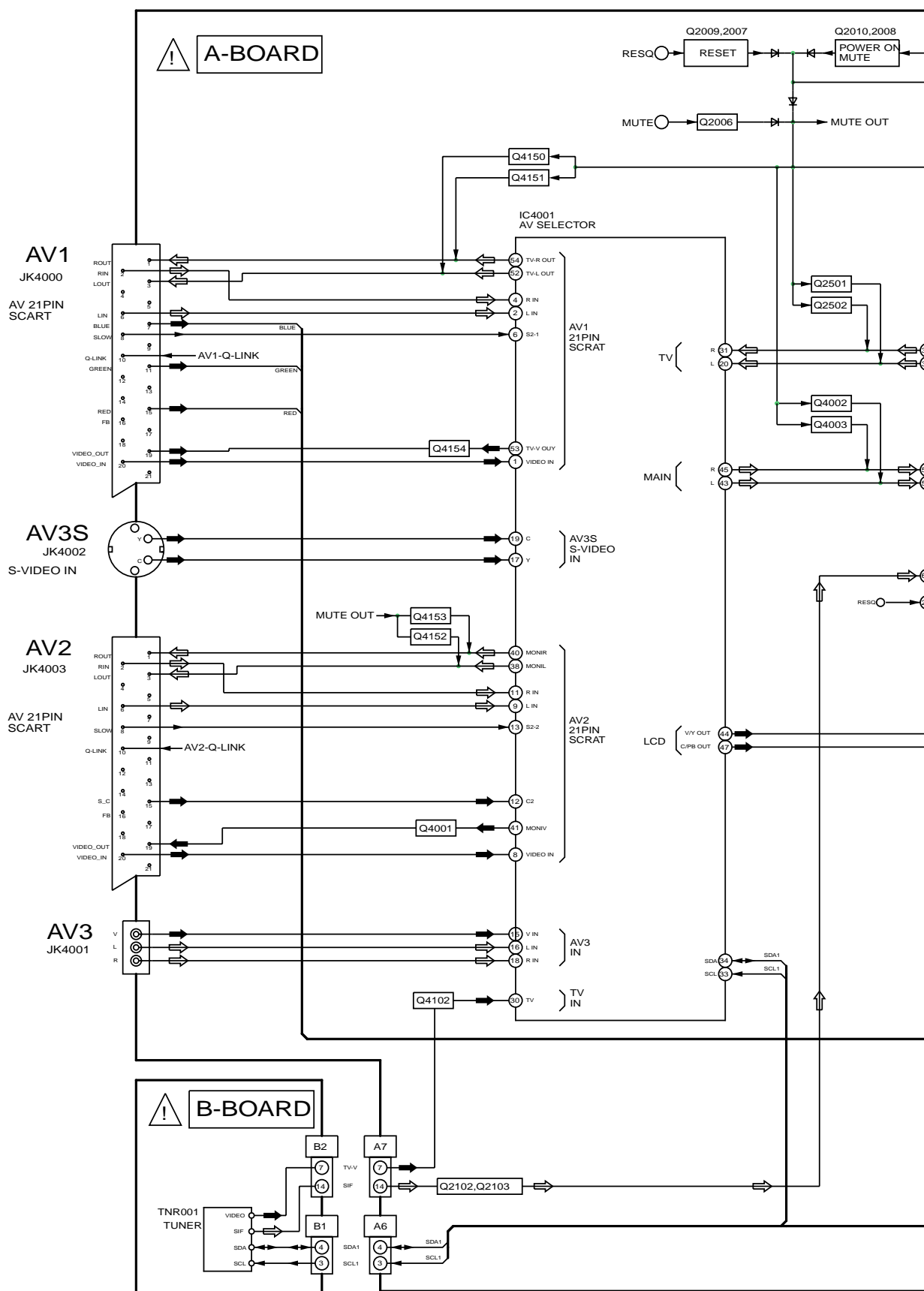
TX-22LT3 Power Block Diagram



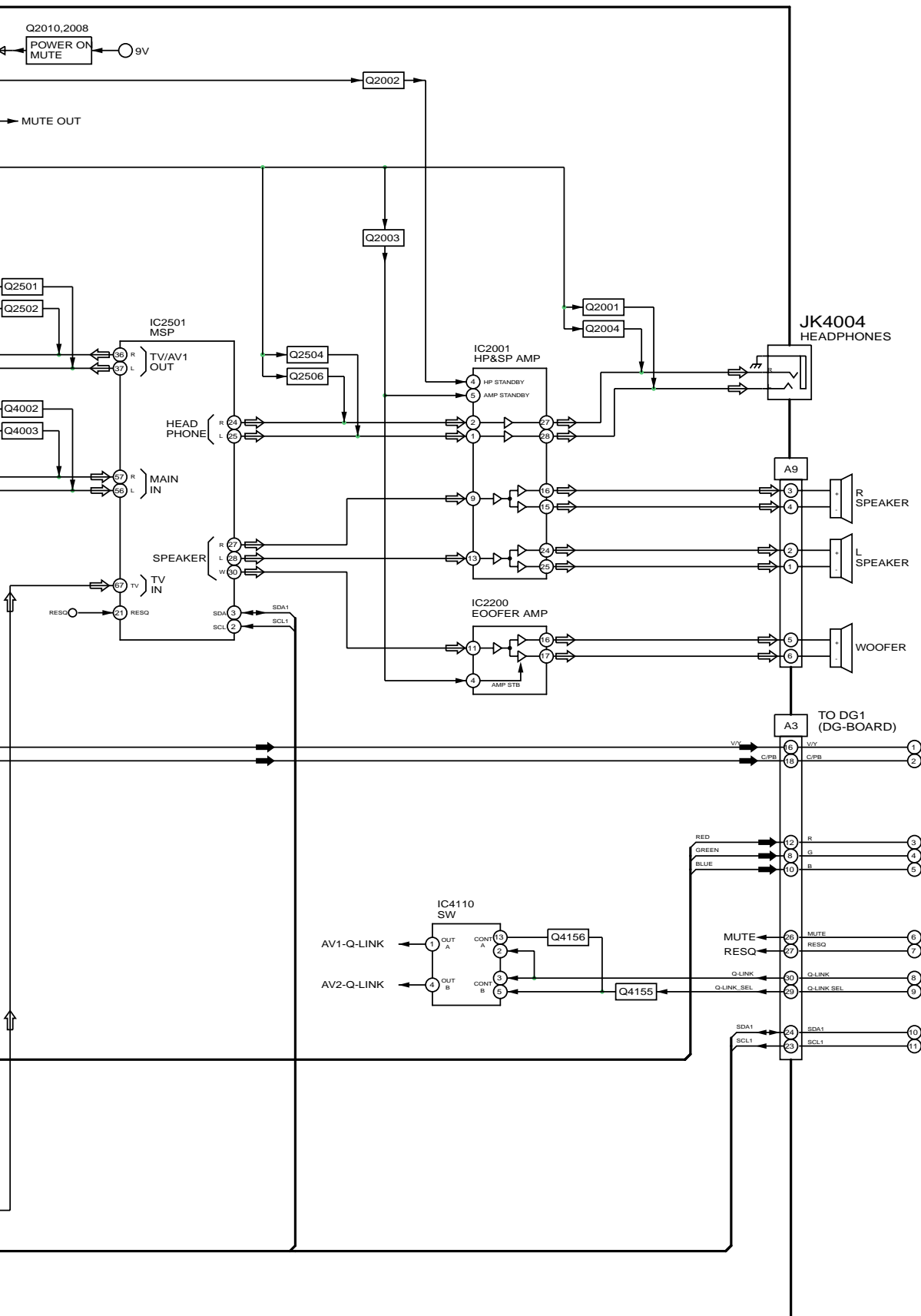


TX-22LT3 Power Block Diagram

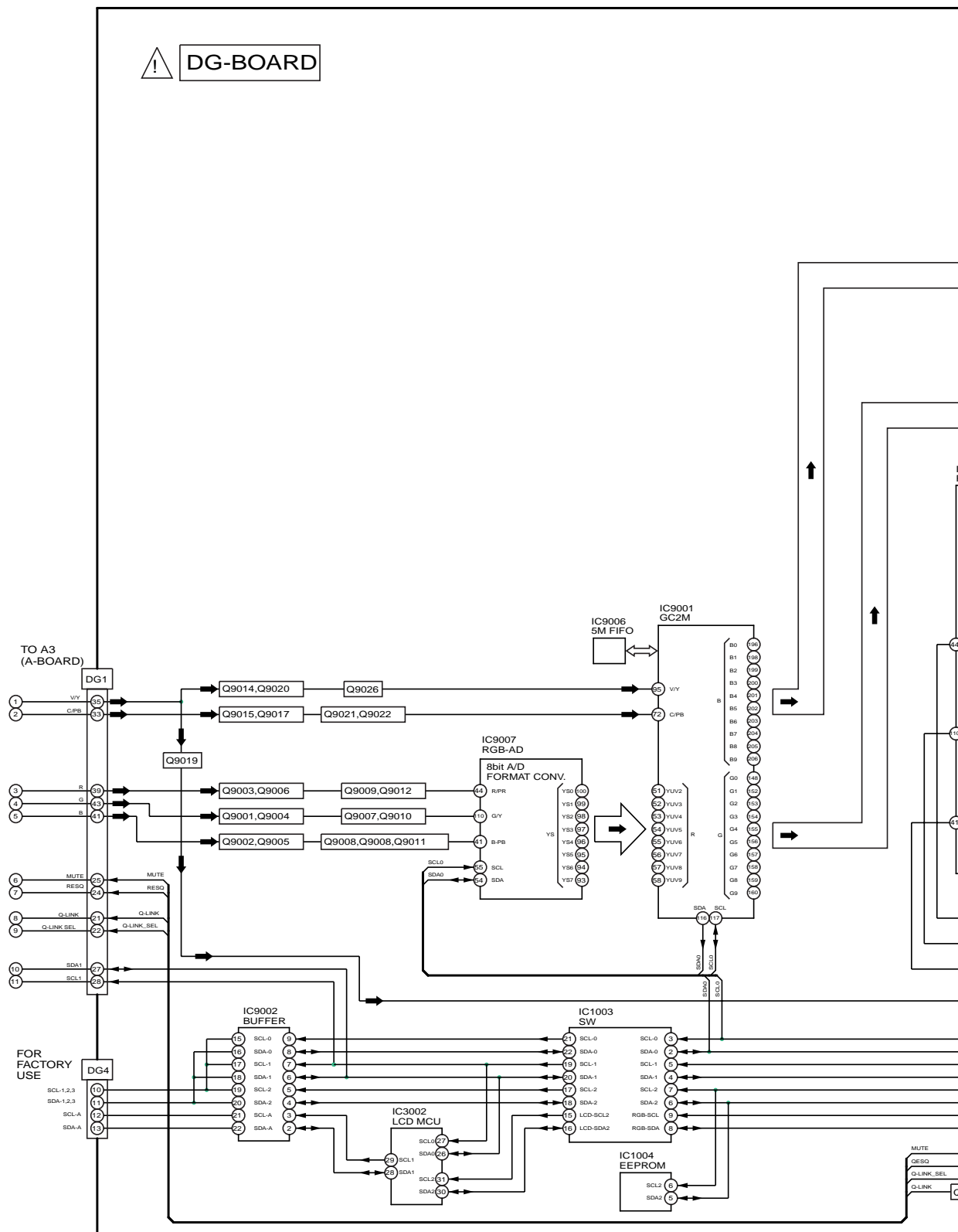
8.3. Signal Block Diagram



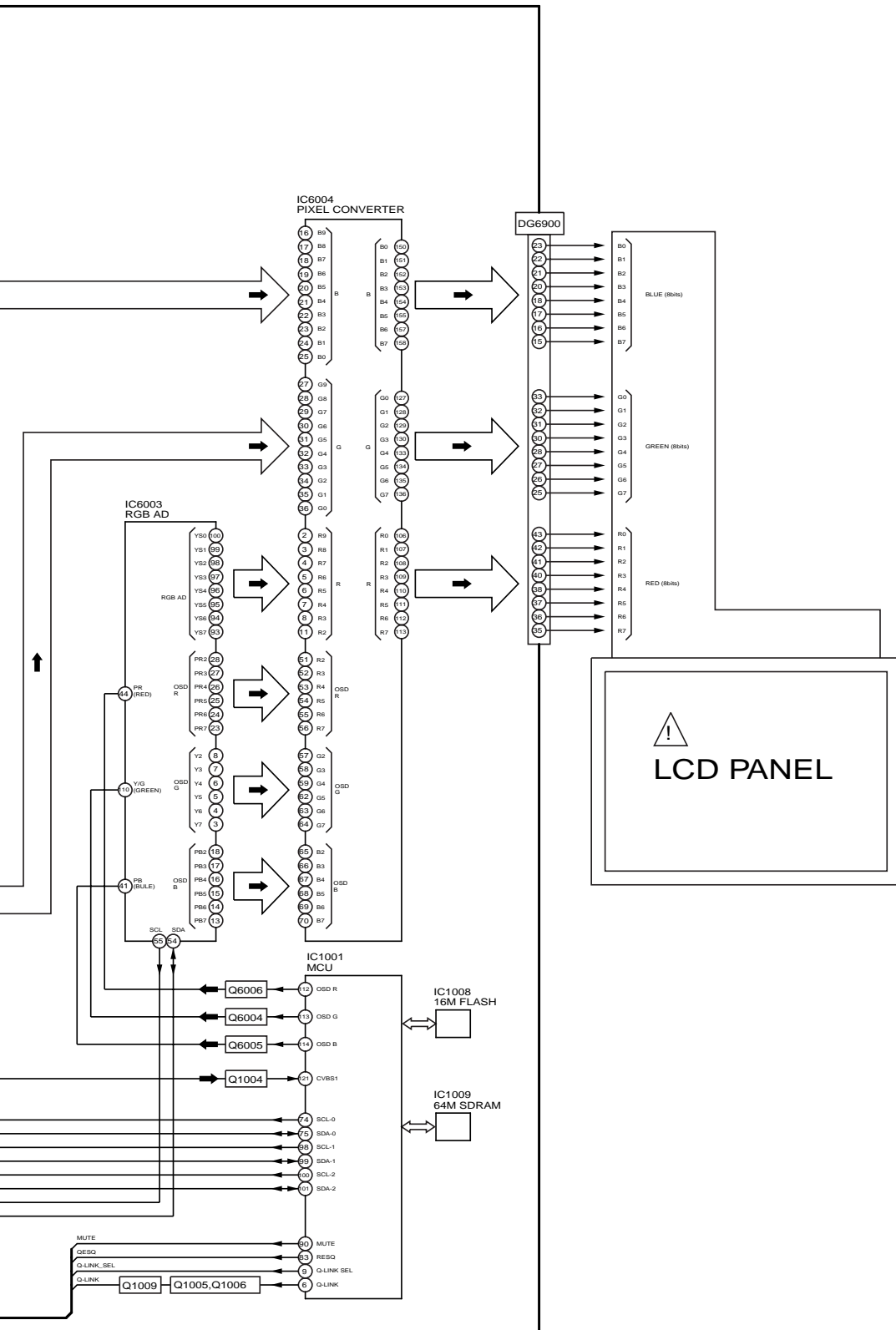
TX-22LT3 Signal Block Diagram



TX-22LT3 Signal Block Diagram

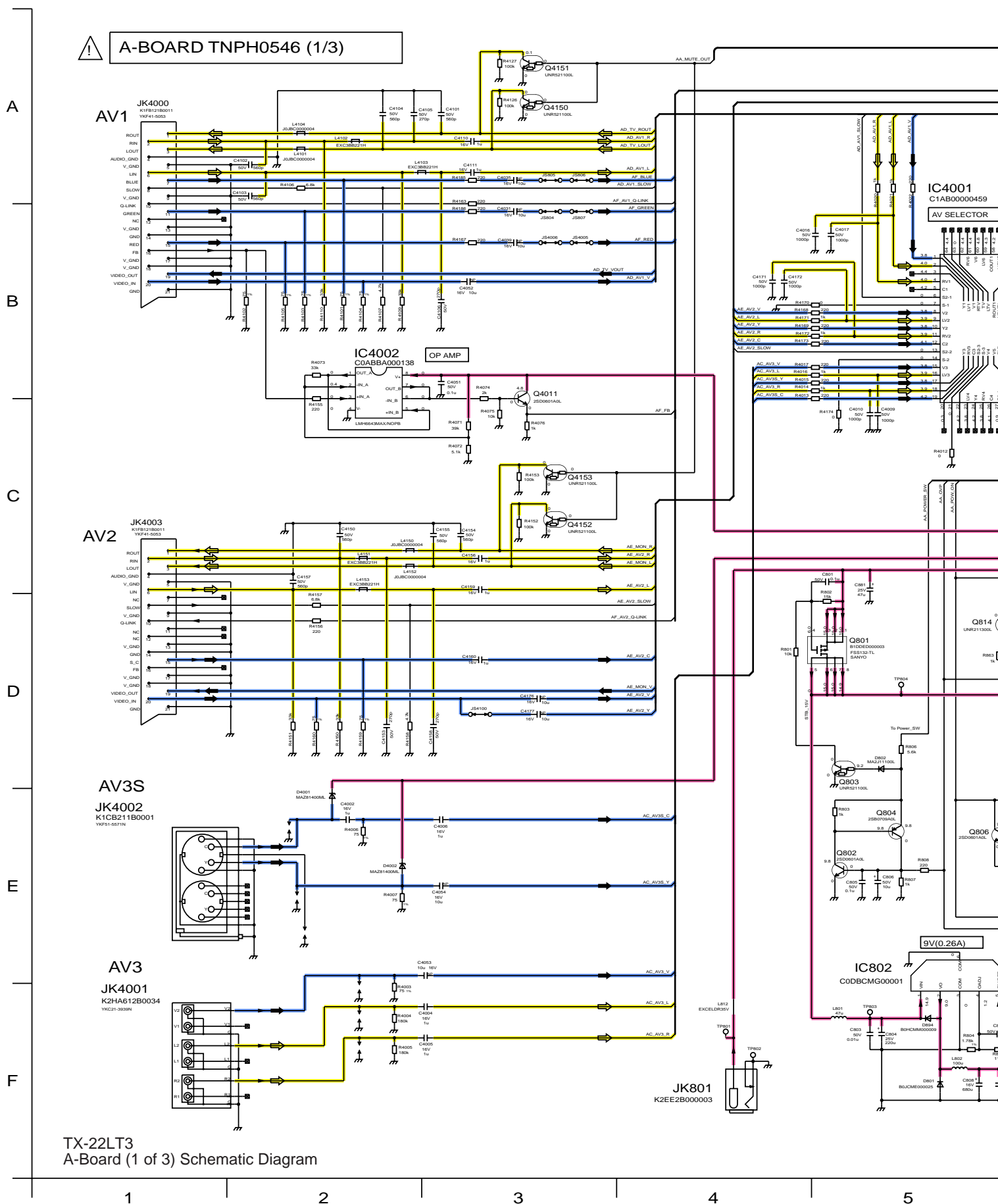


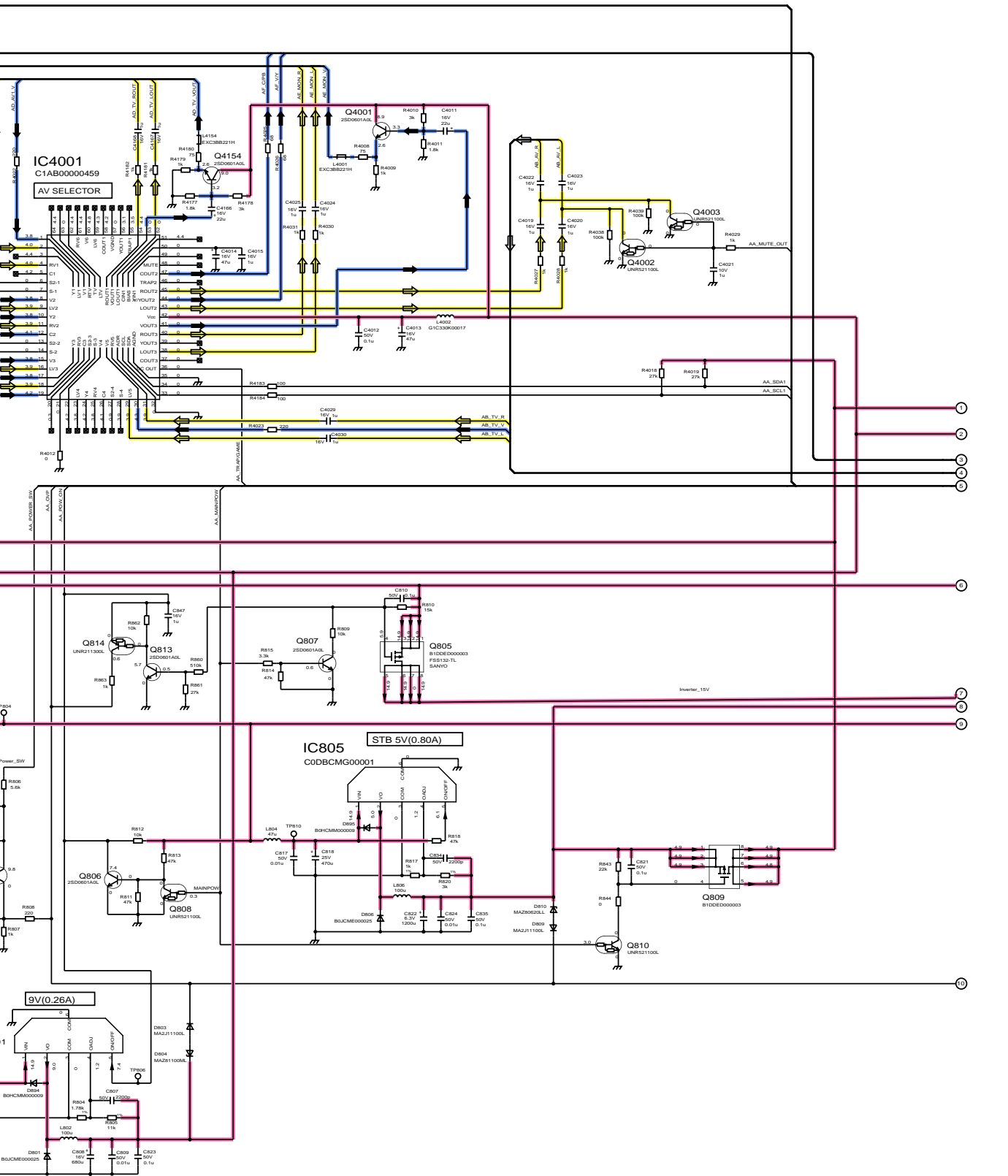
TX-22LT3 Signal Block Diagram



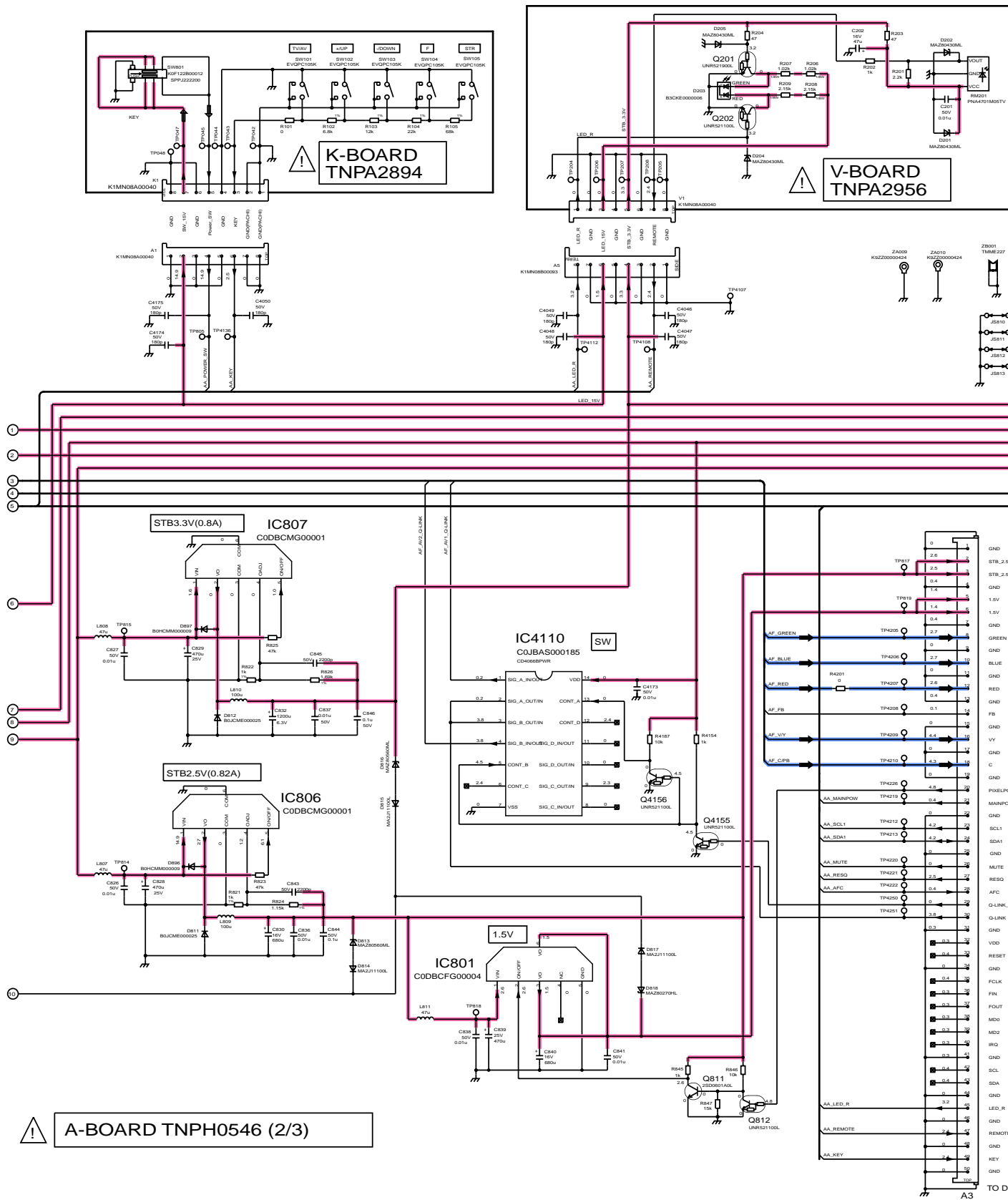
TX-22LT3 Signal Block Diagram

8.4. A-Board (1 of 3) Schematic Diagram





8.5. A-Board (2 of 3), B-Board, K-Board and V-Board Schematic Diagram



TX-22LT3
A-Board (2 of 3), B-Board, K-Board, and V-Board Schematic Diagram

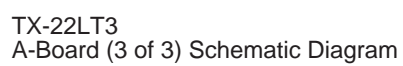
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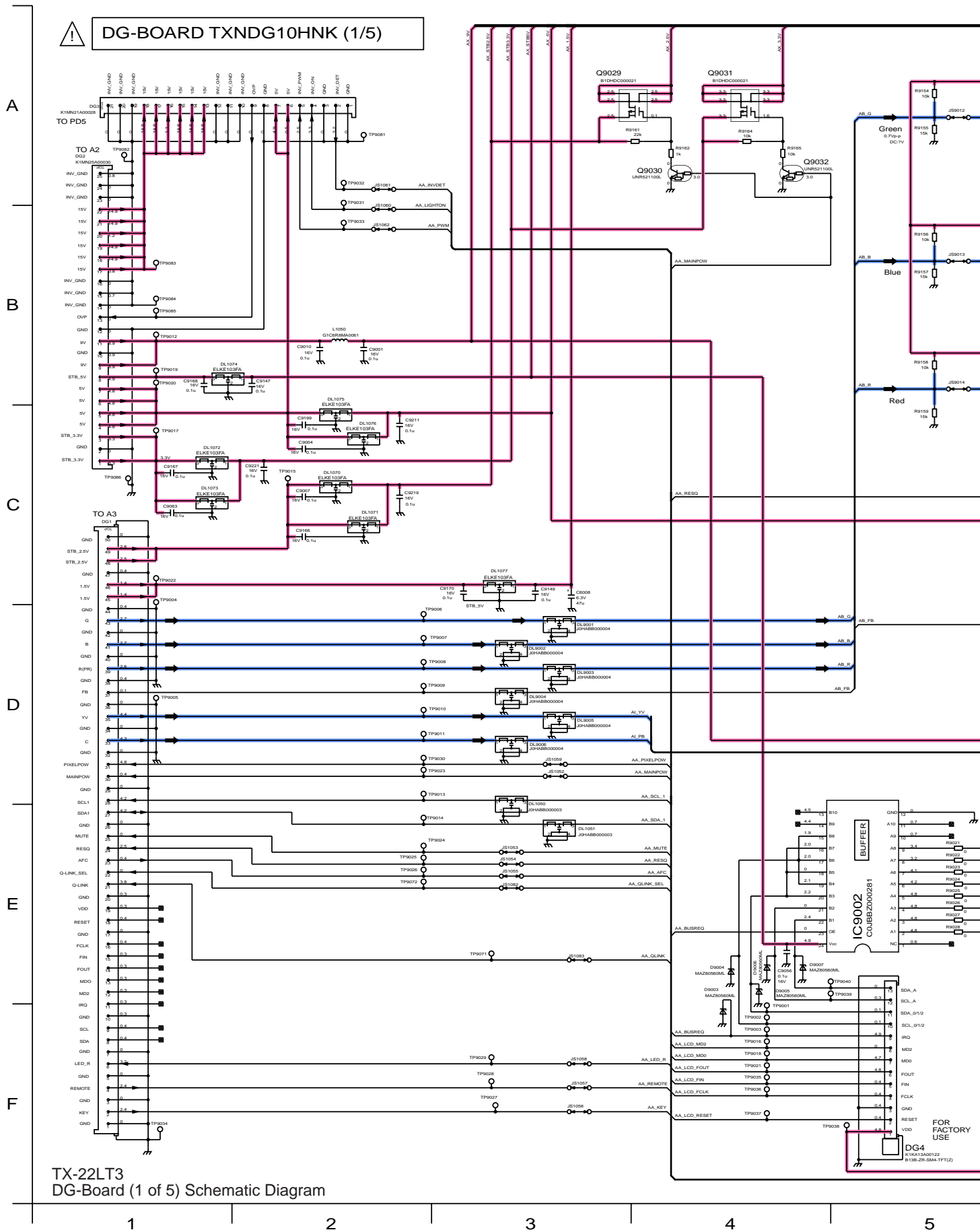
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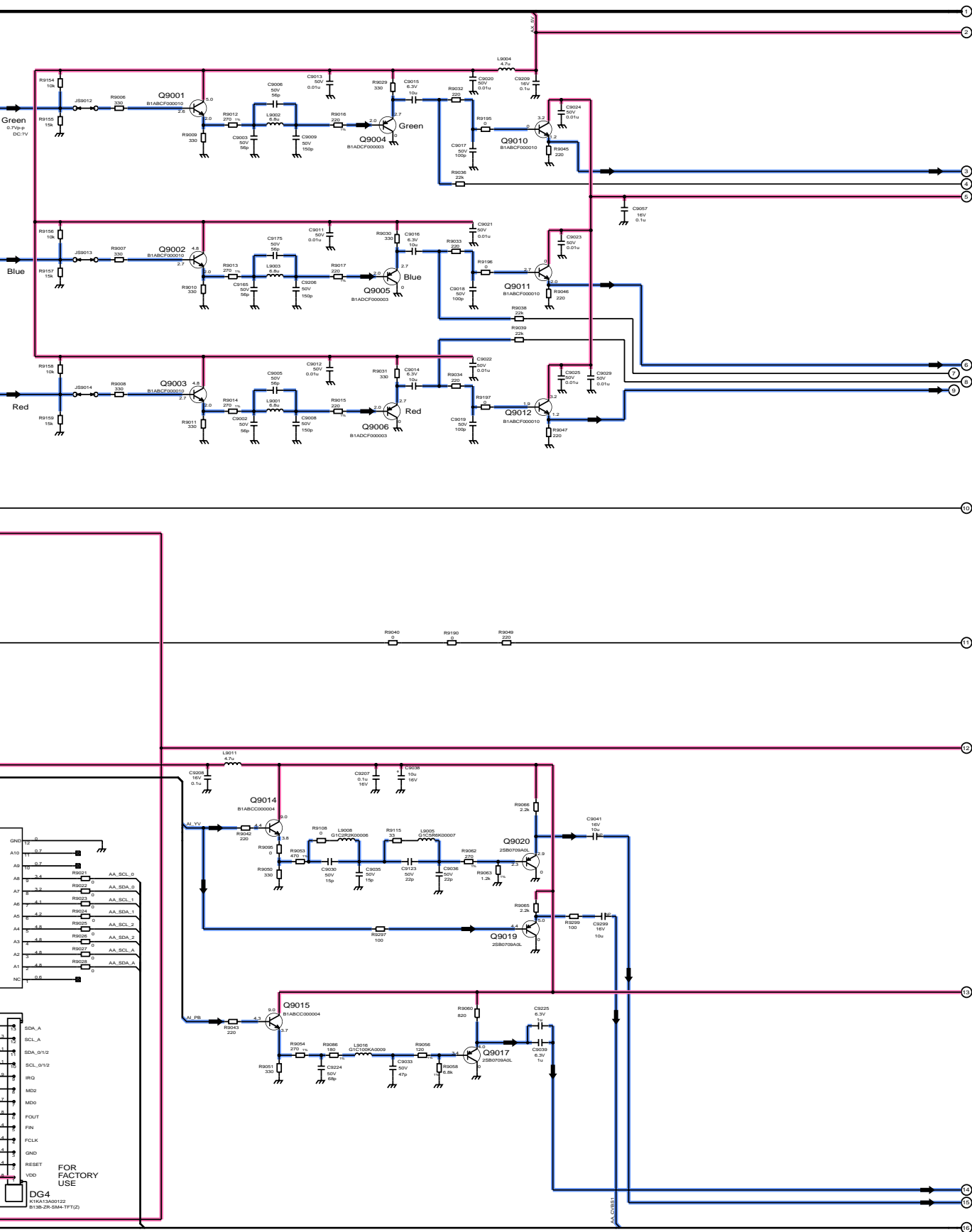
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8.7. DG-Board (1 of 5) Schematic Diagram

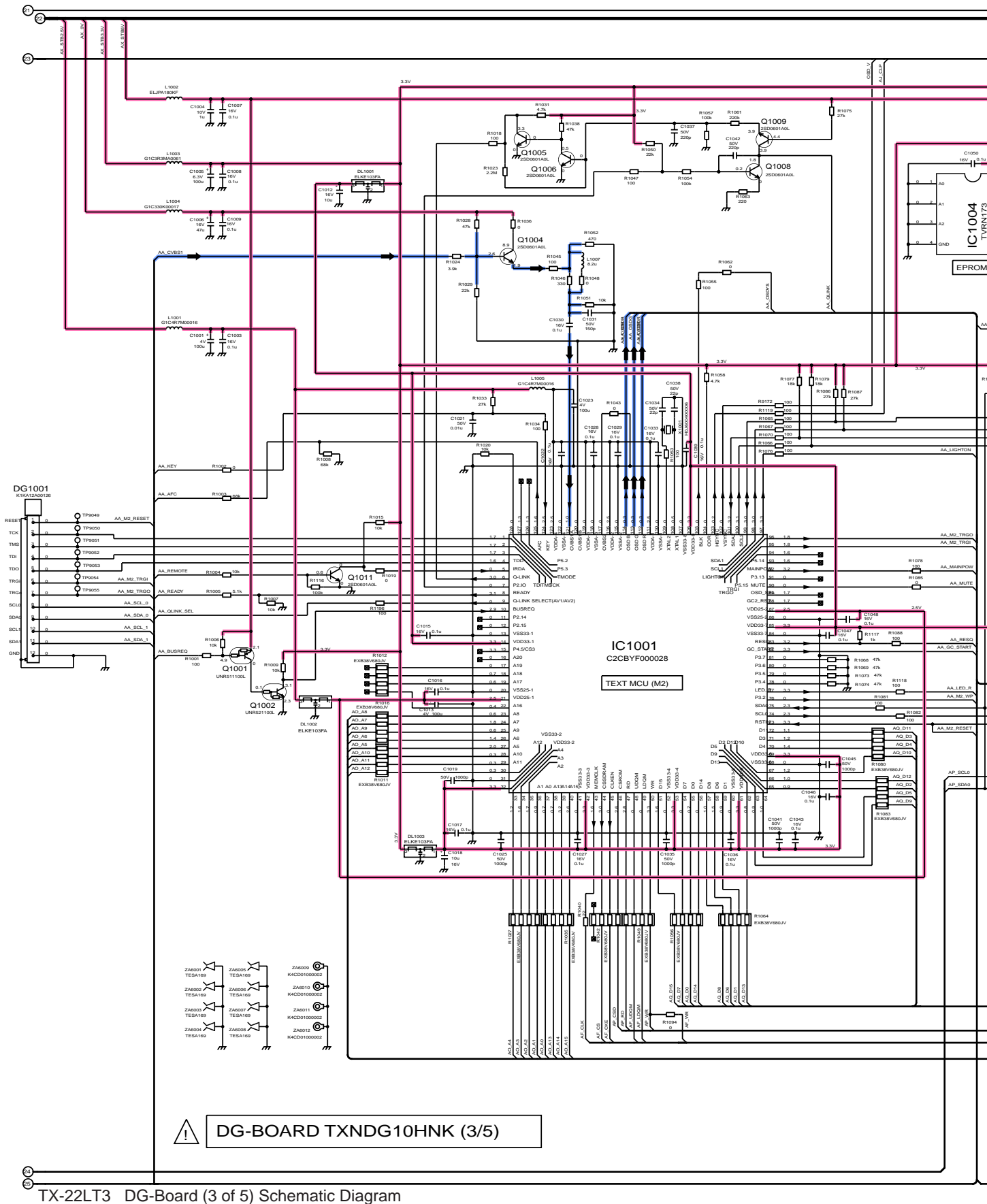




TX-22LT3 DG-Board (1 of 5) Schematic Diagram



8.9. DG-Board (3 of 5) Schematic Diagram



TX-22LT3 DG-Board (3 of 5) Schematic Diagram

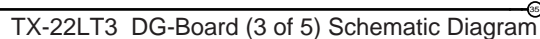
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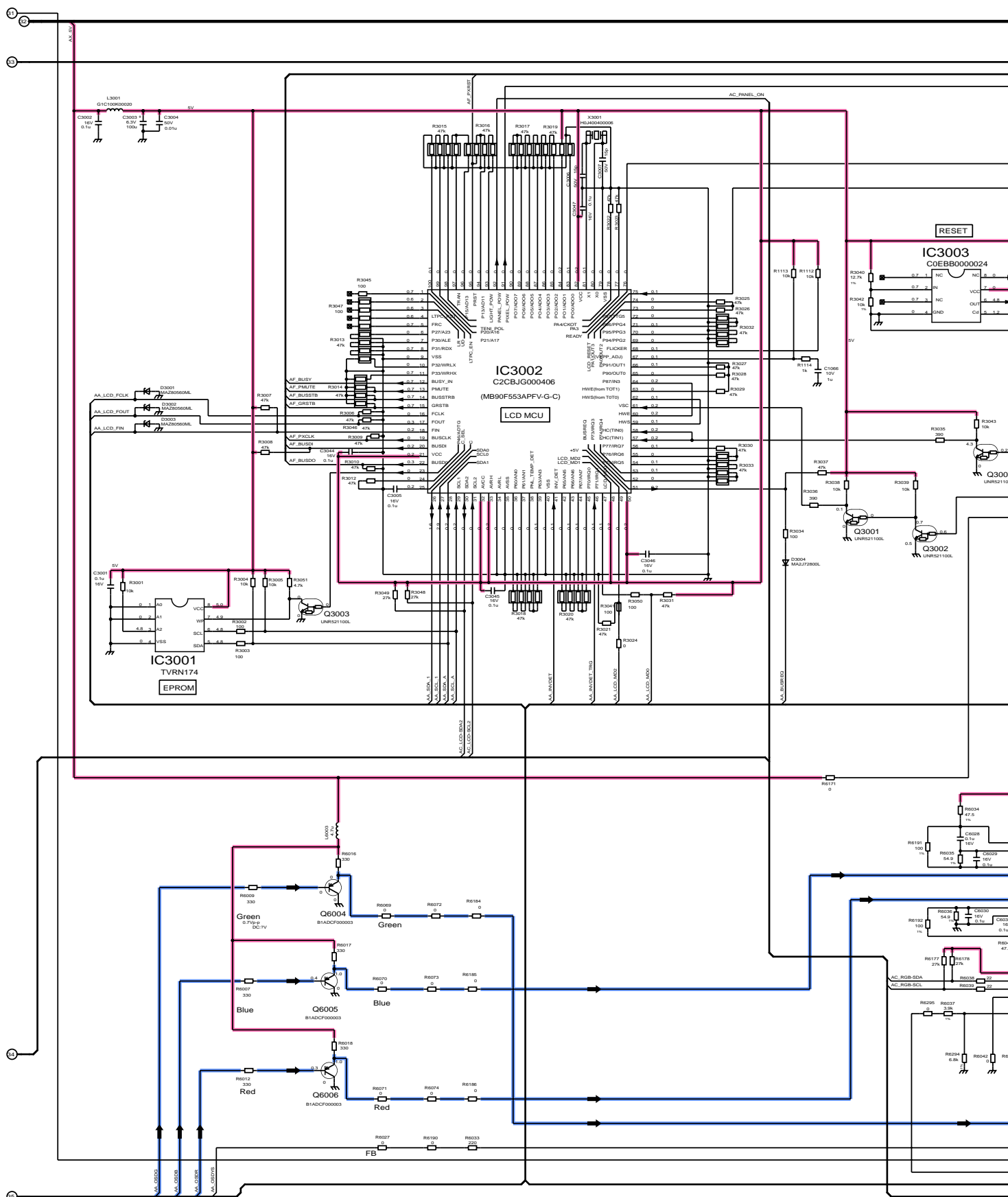
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8.10. DG-Board (4 of 5) Schematic Diagram



TX-22LT3 DG-Board (4 of 5) Schematic Diagram

28

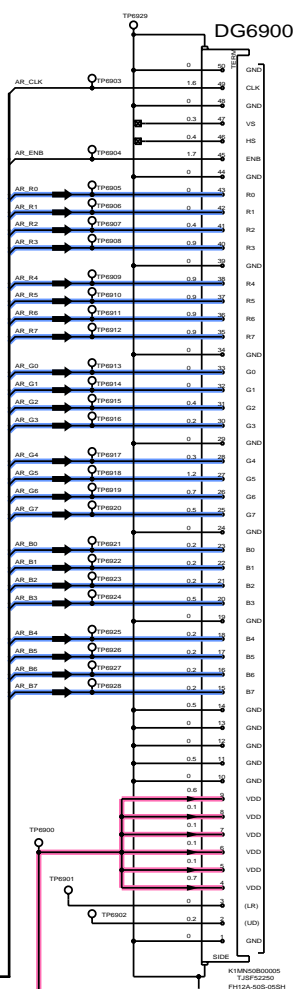
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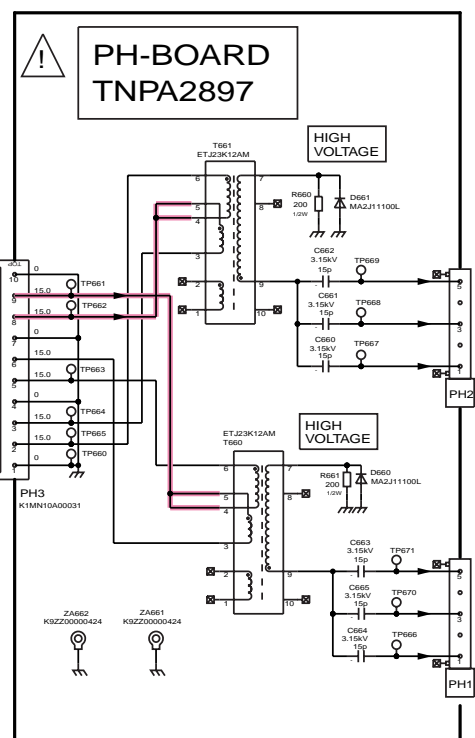
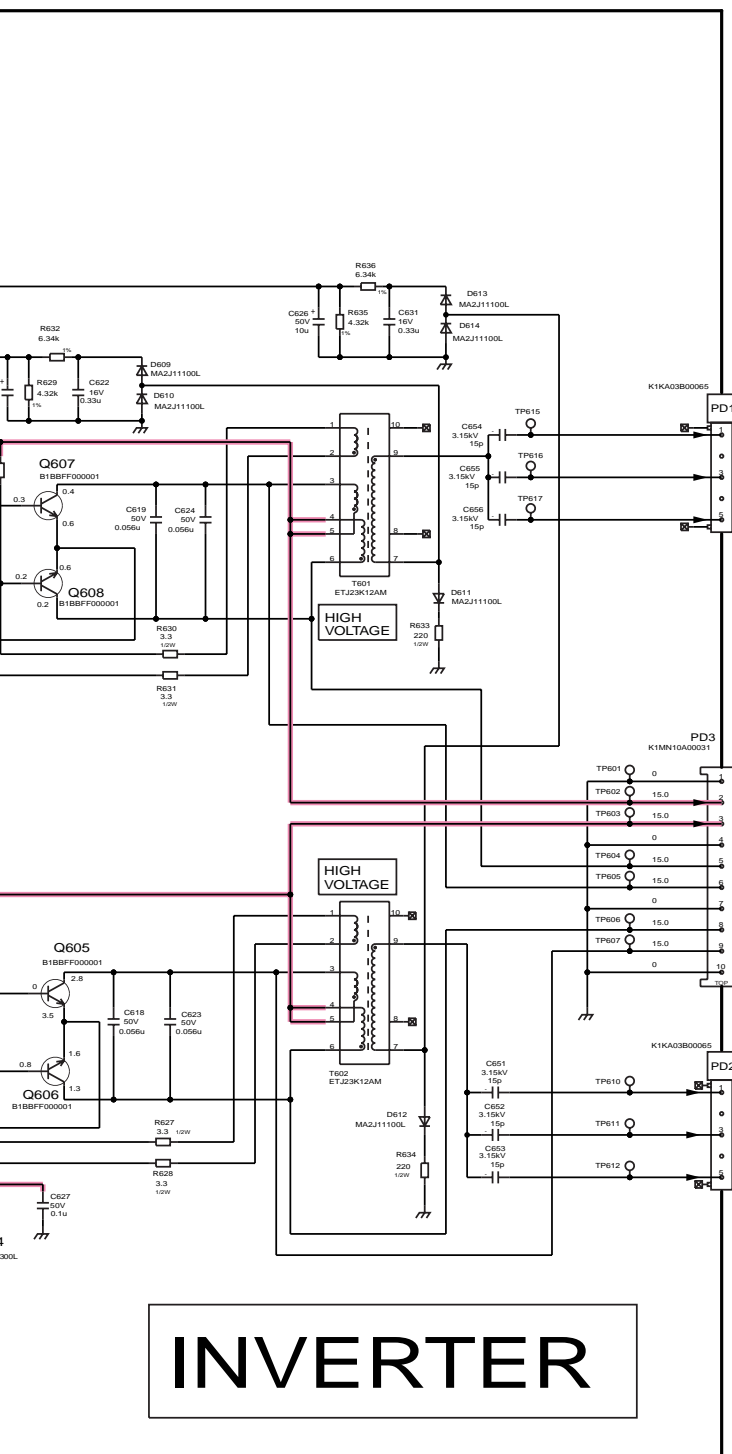
32



TX-22LT3
DG-Board (5 of 5) Schematic Diagram



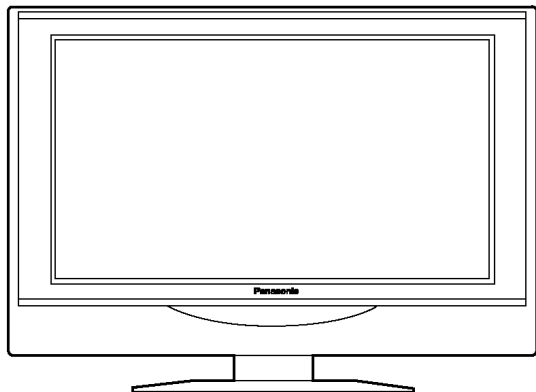
4



TX-22LT3 PD-Board and PH-Board Schematic Diagram

Service Manual

LCD TV



TX-22LT3

LH12 Chassis

Power Source

AC 100~240V, 50/60Hz

Power Consumption

Average use: 67W

Stand-by condition: 1.8W

TV set DC 15V, 3.8 A max.

LCD

22-inch (558 mm), 16:9 aspect ratio LCD panel

Screen Size

486.8mm(W) x 273.6mm(H)

Channel Capability-100

UHF : 21-68

Sound

Speaker

Ø4cm, 2pcs, 16Ω

Audio Output

11W (3.0W+3.0W+5.0W (Woofer)), 10%THD

Headphones

M3(3.5 mm) Jack x 1

Receiving System/ Band name

PAL I

UHF E21 - 68

PAL 525/60

Playback of NTSC tape from some PAL video recorders (VCR)

M.NTSC

Playback from M.NTSC Videorecorders (VCR)

NTSC (AV input only)

Playback from NTSC Videorecorders (VCR)

Aerial-Rear

UHF

Operating Conditions

Temperature: 41°F-95°F(5-35°C)

Humidity: 5%-90% RH (non-condensing)

Connection Terminals

AV1 (Scart connector)

21 Pin socket (Audio/Video in, Audio/Video out, RGB in, Q-Link)

AV2 (Scart connector)

21 Pin socket (Audio/Video in, Audio/Video out, S-Video in, Q-Link)

AV3

VIDEO

RCA PIN Type x 1

S-VIDEO

Mini DIN 4-pin

AUDIO L-R

RCA PIN Type x 2

Dimensions (W x D x H)

Including TV Stand

586mm x 255mm x 428mm

TV Set Only

586mm x 96mm x 387mm

Weight (Mass)

11kg Net

Note:

Design and Specifications are subject to change without notice.
Weight and Dimensions shown are approximate.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Touch-Current Check

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a measuring network for touch currents between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use Leakage Current Tester (Simpson 228 or equivalent) to measure the potential across the measuring network.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reserve the AC plug in the AC outlet and repeat each of the above measure.
6. The potential at any point (TOUCH CURRENT) expressed as voltage U_1 and U_2 , does not exceed the following values:
For a. c.: $U_1 = 35 \text{ V}$ (peak) and $U_2 = 0.35 \text{ V}$ (peak);
For d. c.: $U_1 = 1.0 \text{ V}$,

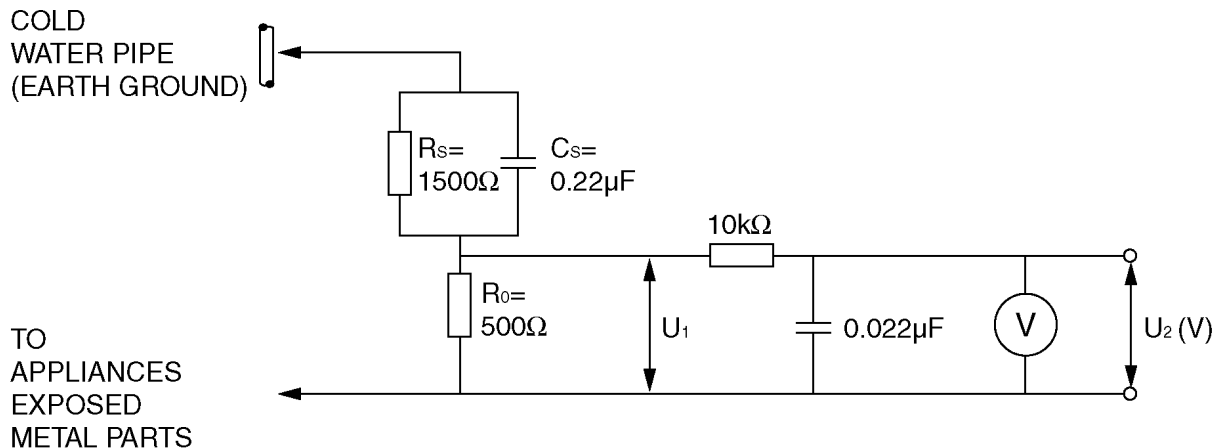
Note:

The limit value of $U_2 = 0.35 \text{ V}$ (peak) for a. c. and $U_1 = 1.0 \text{ V}$ for d. c. correspond to the values 0.7 mA (peak) a. c. and 2.0 mA d. c.

The limit value $U_1 = 35 \text{ V}$ (peak) for a. c. correspond to the value 70 mA (peak) a. c. for frequencies greater than 100 kHz .

7. In case a measurement is out of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Measuring network for TOUCH CURRENTS



Resistance values in ohms (Ω)

V: Voltmeter or oscilloscope
(r.m.s. or peak reading)

Input resistance: $\geq 1 \text{ M}\Omega$

Input capacitance: $\leq 200 \text{ pF}$

Frequency range: 15 Hz to 1 MHz and d.c. respectively

NOTE - Appropriate measures should be taken to obtain the correct value in case of non-sinusoidal waveforms.

Figure 1

2 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).


1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

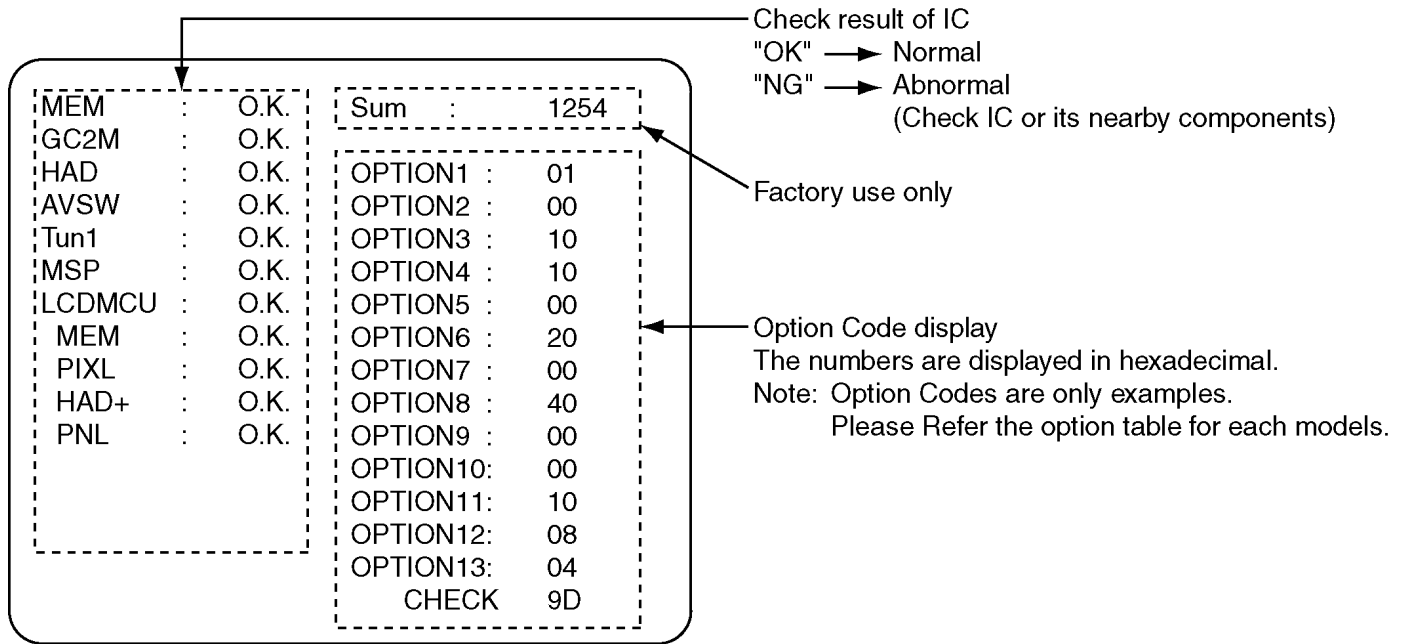
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the schematic diagrams, Exploded Views and replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

3 Self Check

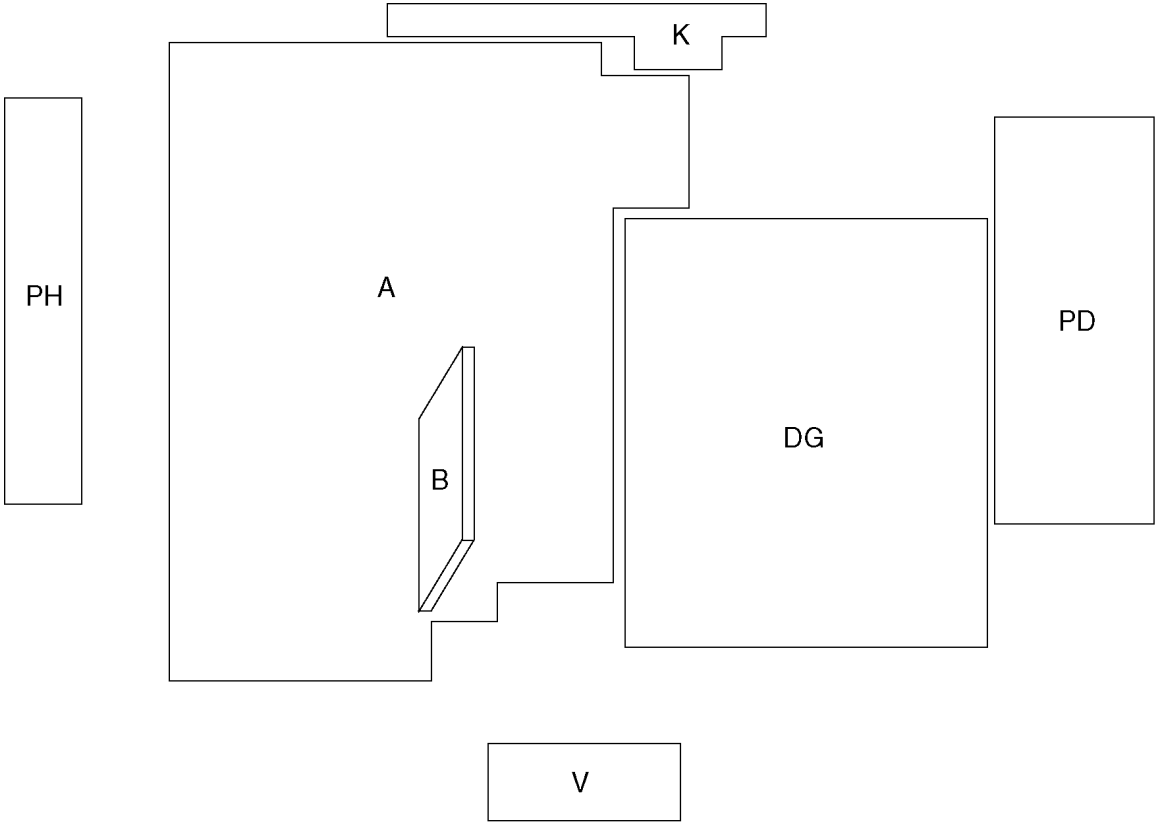
1. Self-Check is used to automatically check the bus lines and hexadecimal code of the TV set.
2. To get into the Self -Check mode press the Down (–/∇) button on the customer controls at the front of the set, at the same time pressing the Recall button on the remote control, and the screen will show :



If the CCU ports have been checked and found to be incorrect or not located then "--" will appear in place of "O.K."

Display	Ref. No.	Description	P.C.B.
MEM	IC1004	EEPROM	DG-Board
GC2M	IC9001	Global Core	DG-Board
HAD	IC9007	RGB A/D Converter	DG-Board
AVSW	IC4001	AV selector	A-Board
Tun1	TNR001	Tuner	B-Board
MSP	IC2501	Multi Sound Processor	A-Board
LCDMCU	IC3002	LCD MCU	DG-Board
MEM	IC3001	EEPROM	DG-Board
PIXL	IC6004	Pixel Converter	DG-Board
HAD+	IC6003	RGB A/D Converter	DG-Board
PNL	-	LCD Panel	-

4 Chasis Board Layout

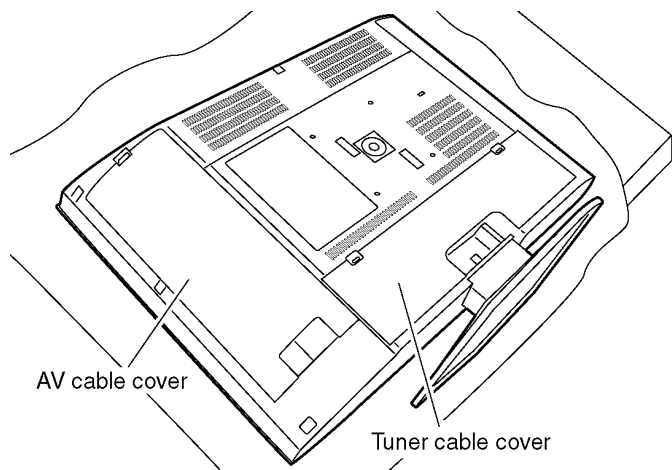


Board Name	Function
A-Board	Main (DC Power Supply, Audio, Input Select, AV Connector)
B - Board	Tuner
DG - Board	Global Core, RGB Processor, Micro Processor, Pixel Converter)
K - Board	Switch
PD - Board	Back Light Inverter
PH - Board	Back Light Inverter
V - Board	RM, LED

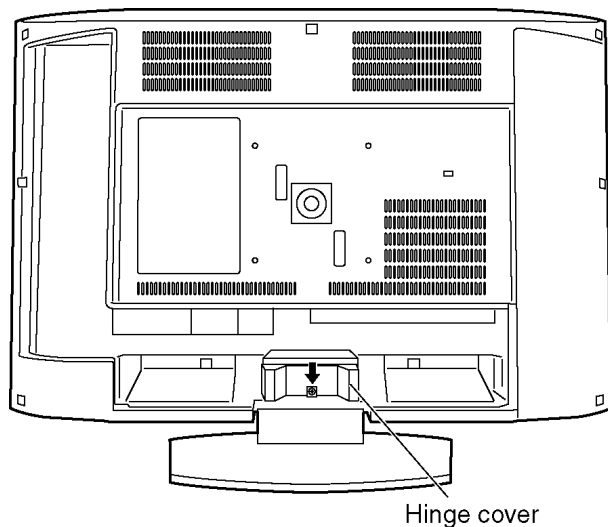
5 Servicing method

5.1. Removing the tilt base

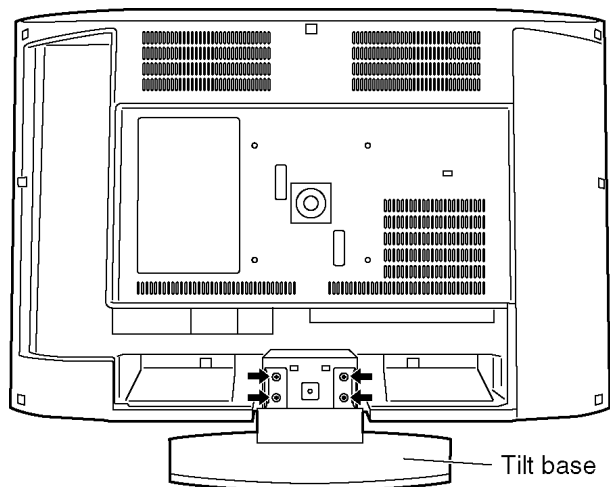
1. Lay down the main unit so that the rear cover faces upward.
2. Remove the AV cable cover.
3. Remove the tuner cable cover.



4. Remove the fixing screw (1pcs).
5. Remove the hinge cover.

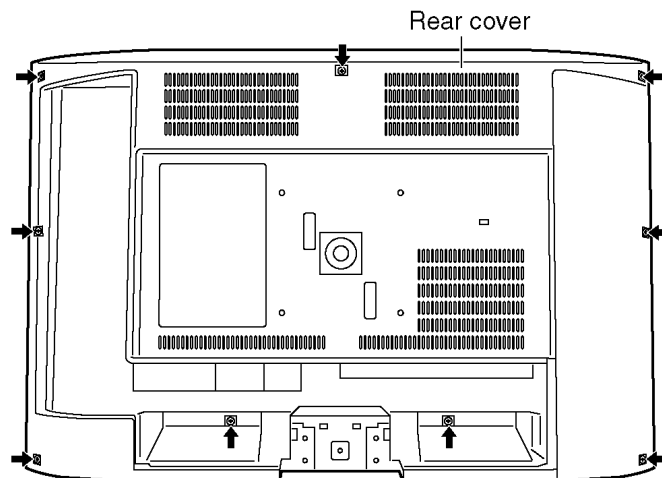


6. Remove the fixing screws (4pcs).
7. Remove the tilt base.



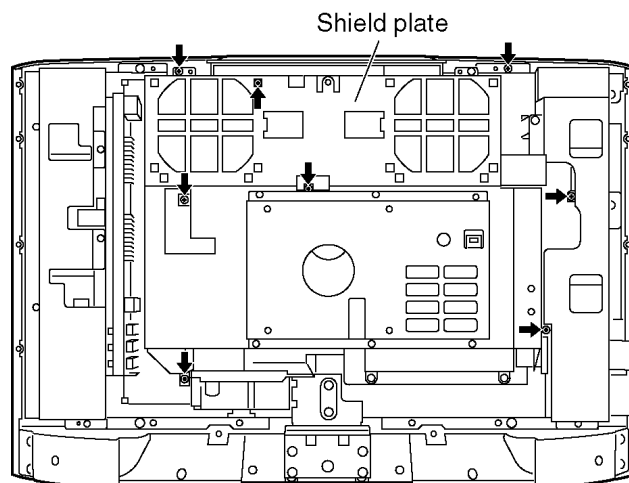
5.2. Removing the rear cover

1. Remove the tilt base. (See 5.1.)
2. Remove the fixing screws (9pcs).
3. Remove the rear cover.



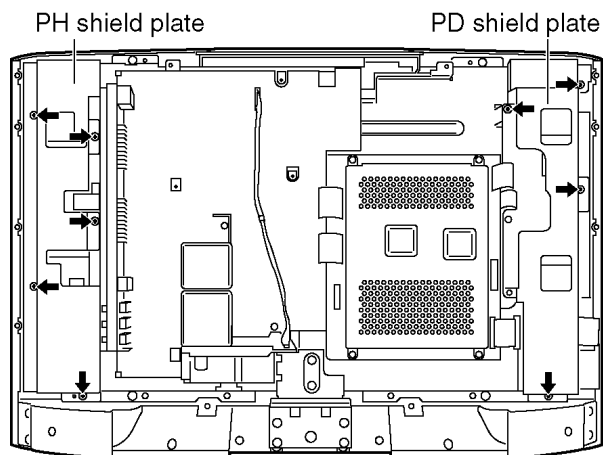
5.3. Removing the shield plate

1. Remove the rear cover. (See 5.2.)
2. Remove the fixing screws (8psc).
3. Remove the shield plate.



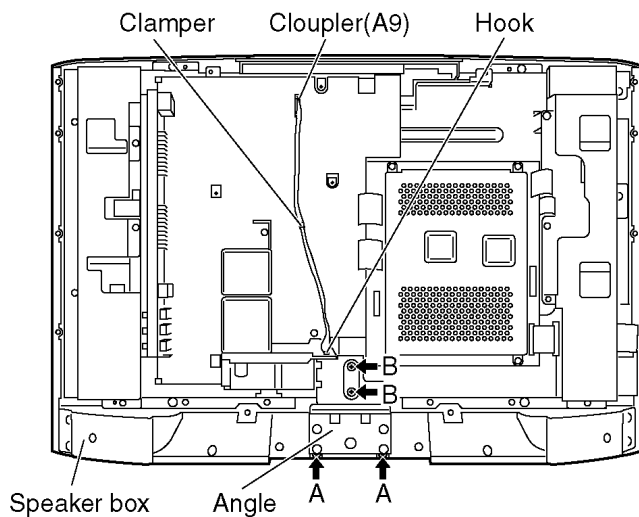
5.4. Removing the PH shield plate and the PD shield plate

1. Remove the shield plate. (See 5.3.)
2. Remove the fixing screws (5psc).
3. Remove the PH shield plate.
4. Remove the fixing screws (4psc).
5. Remove the PD shield plate.



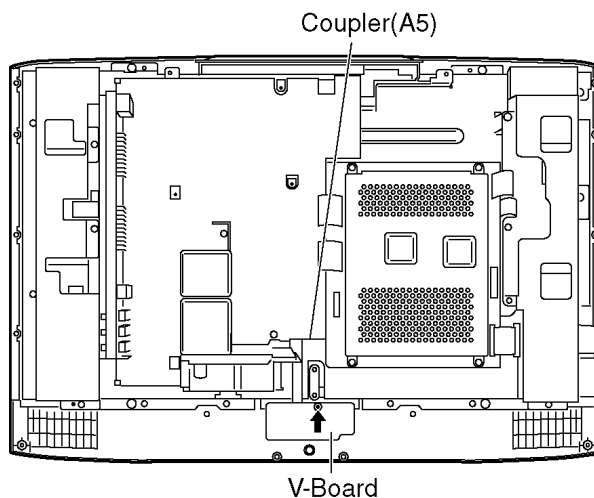
5.5. Removing the speaker box

1. Remove the shield plate (See 5.3.)
2. Remove the fixing screws A (2pcs) and B (2pcs).
3. Remove the angle.
4. Disconnect the coupler(A9), and unlock the cable clamber and hook to free the cable
5. Remove the speaker box.



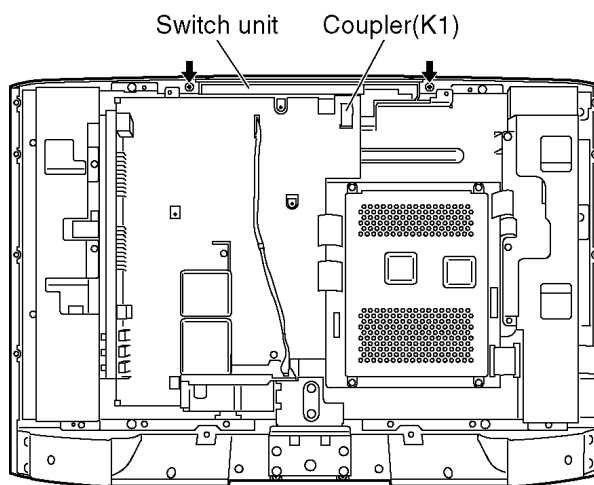
5.6. Removing the V-Board

1. Remove the speaker box. (See 5.5.)
2. Disconnect the coupler (A5).
3. Remove the fixing screw (1psc).
4. Remove the V-Board.



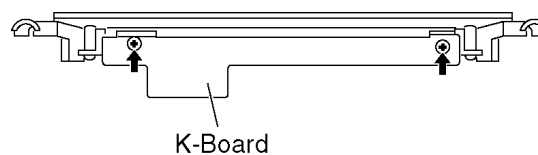
5.7. Removing the switch unit

1. Remove the shield plate. (See 5.3.)
2. Disconnect the coupler (K1).
3. Remove the fixing screws (2psc).
4. Remove the switch unit.



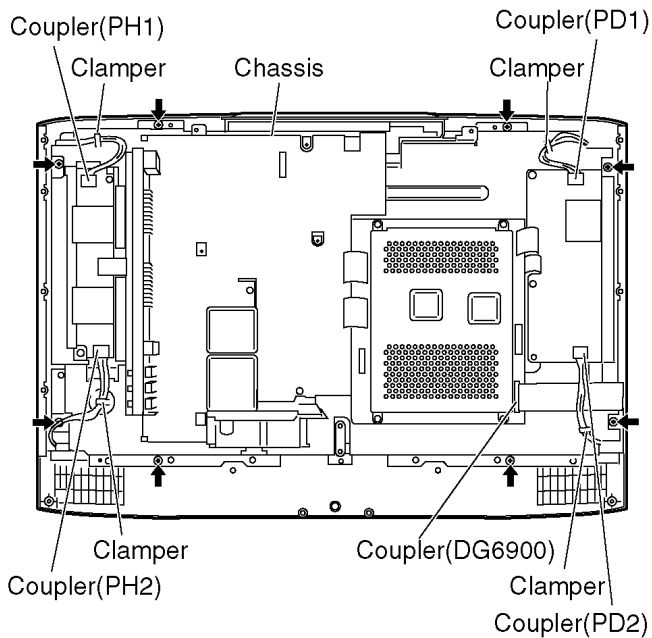
5.8. Removing the K-Board

1. Remove the switch unit. (See 5.7.)
2. Remove the fixing screws (2psc).
3. Remove the K-Board.



5.9. Removing the chassis

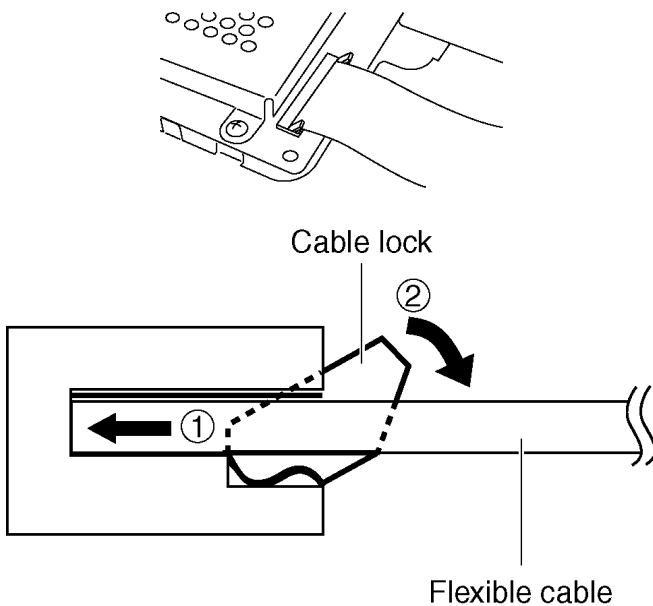
1. Remove the PH shield plate and the PD shield plate. (See 5.4.)
2. Remove the V-Board. (See 5.6.)
3. Disconnect the couplers (PH1, PH2, PD1, PD2 and DG6900), and unlock the cable clampers to free the cable.
4. Remove the chassis.



• Disconnecting flexible cable from the coupler.
Lift up both ends of the cable lock (brown colored) simultaneously to release the locking. Once the flat cable is disconnected from the coupler, the cable lock tends to detach from the coupler easily. Due precaution should be paid on it.

• Reconnecting flexible cable to the coupler.

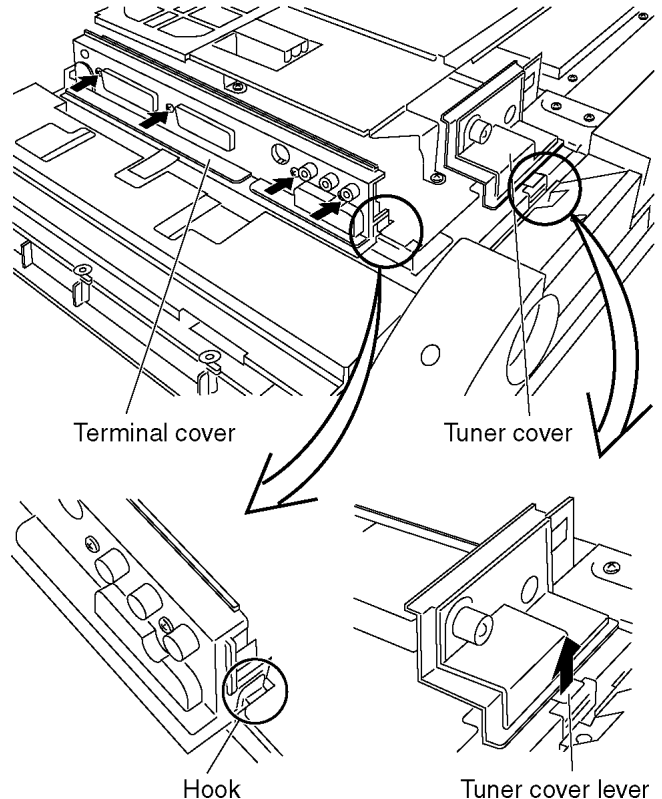
Attach the cable lock (brown) to the coupler (white) with its both ends being pulled up. Insert the flat cable into the coupler over the cable lock until the cable stops firmly at the coupler end. Press down both ends of the cable lock until their upper faces are positioned flat to lock the cable.



5.10. Removing the tuner cover and the terminal cover

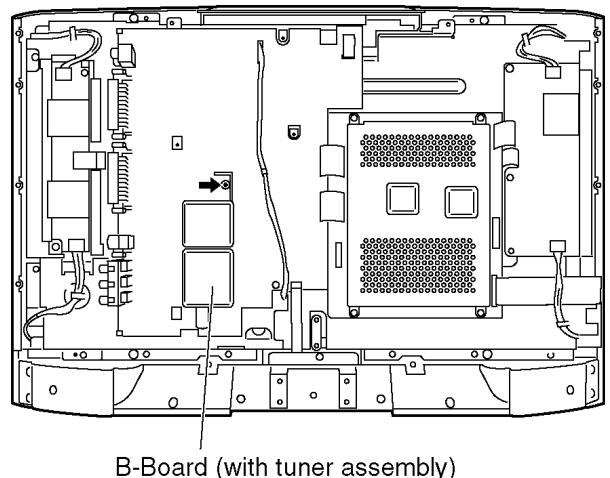
1. Remove the rear cover. (See 5.2.)
2. Remove the tuner cover.
*The tuner cover lever is pulled up and remove the tuner cover.
3. Remove the fixing screws (4pcs).
4. Remove the terminal cover.

*A hooks is removed.



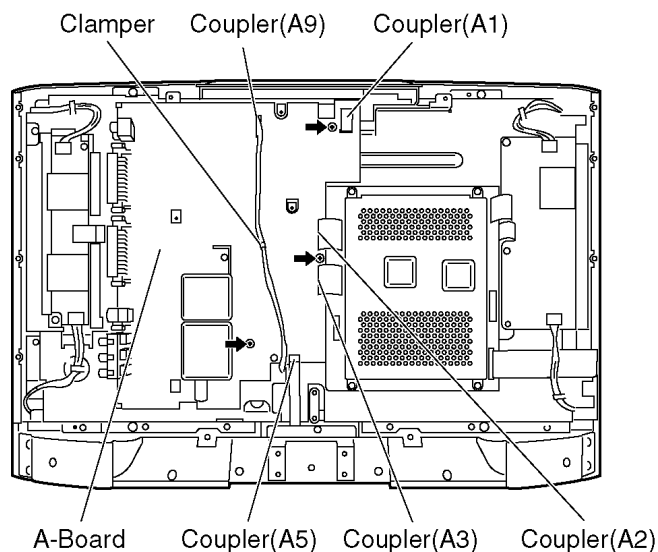
5.11. Removing the B-Board (with tuner assembly)

1. Remove the shield plate. (See 5.3.)
2. Remove the tuner cover (See 5.10.)
3. Remove the fixing screw (1pcs).
4. Remove the B-Board.



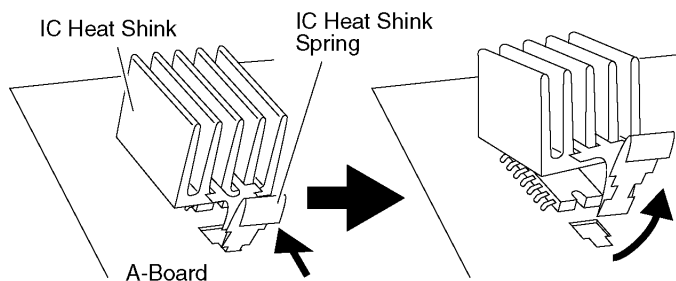
5.12. Removing the A-Board

1. Remove the shield plate. (See 5.3.)
2. Remove the angle. (See 5.5.)
3. Remove the terminal cover. (See 5.10.)
4. Remove B-Board. (See 5.11.)
5. Disconnect the couplers (A1,A2, A3 and A5).
6. Disconnect the coupler (A9), and unlock the cable clamber to free the cable.
7. Remove the fixing screws (3pcs).
8. Remove the A-Board.



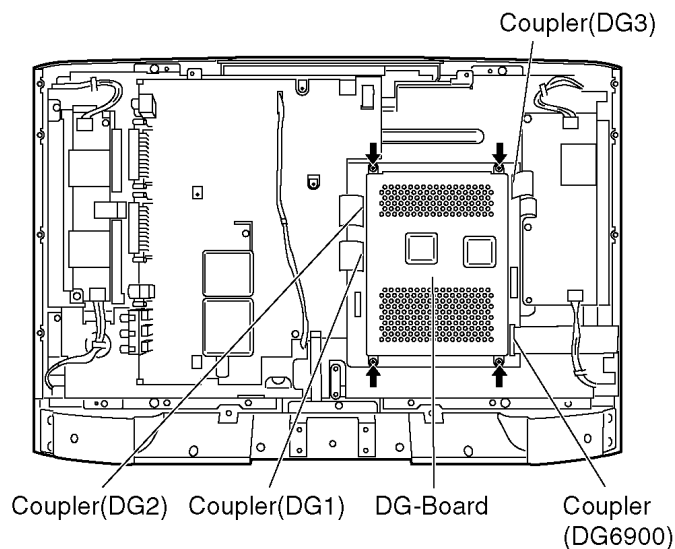
5.13. Removing the IC Heat Shink

1. Pressing IC Heat Shink Spring and pull up IC Heat Shink.



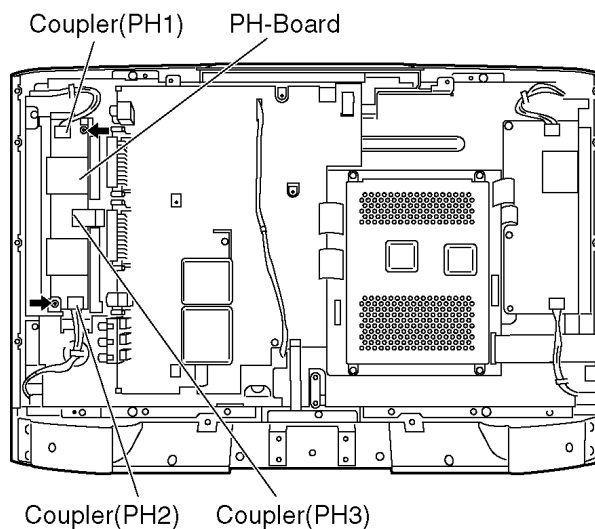
5.14. Removing the DG-Board

1. Remove the shield plate. (See 5.3.)
2. Disconnect the couplers (DG1, DG2, DG3 and DG6900).
*When removing coupler (DG6900), cautions are required for the handling of a connector. (See 5.9.)
3. Remove the fixing screws (4pcs).
4. Remove the DG-Board.



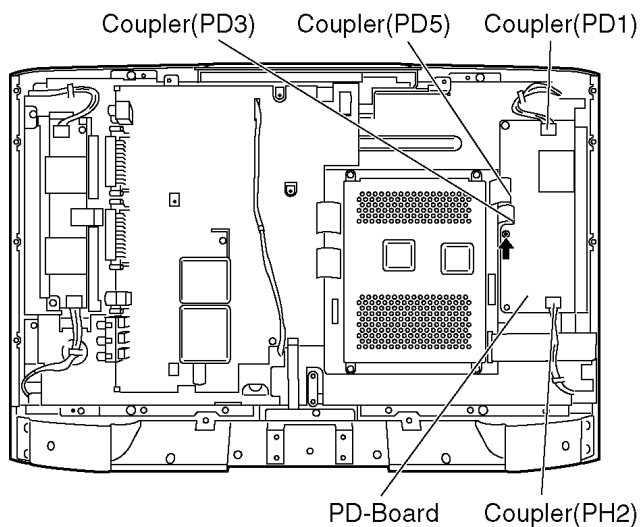
5.15. Removing the PH-Board

1. Remove the rear cover. (See 5.2.)
2. Remove the PH shield plate. (See 5.4.)
3. Disconnect the couplers (PH1, PH2 and PH3).
4. Remove the fixing screws (2pcs).
5. Remove the PH-Board.



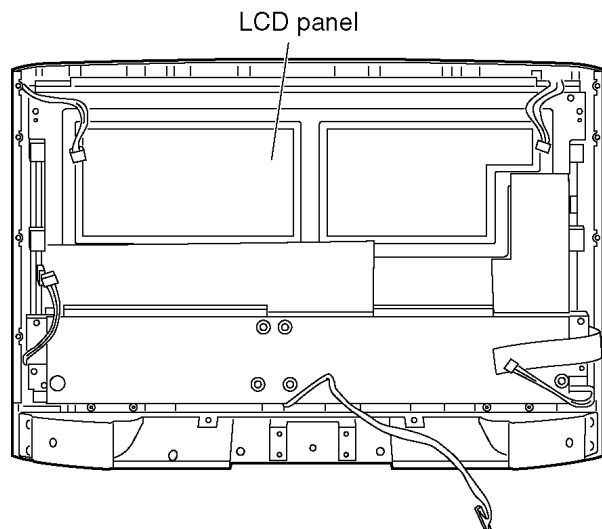
5.16. Removing the PD-Board

1. Remove the rear cover. (See 5.2.)
2. Remove the PD shield plate. (See 5.4.)
3. Disconnect the couplers (PD1, PD2, PD3 and PD5).
4. Remove the fixing screw (1pcs).
5. Remove the PD-Board.



5.17. Removing the LCD panel


1. Remove the chassis. (See 5.9.)
2. Remove the LCD panel.



6 Service Mode Function

MPU controls the functions switching for each IICs through IIC bus in this chassis. The following setting and adjustment can be adjusted by remote control in Service Mode.

6.1. How to enter SERVICE 1

1. In sound menu, set BASS to MAXIMUM, and set TREBLE to MINIMUM.
2. Simultaneously press **INDEX** button on remote control and **DOWN** button [] on the TV set.

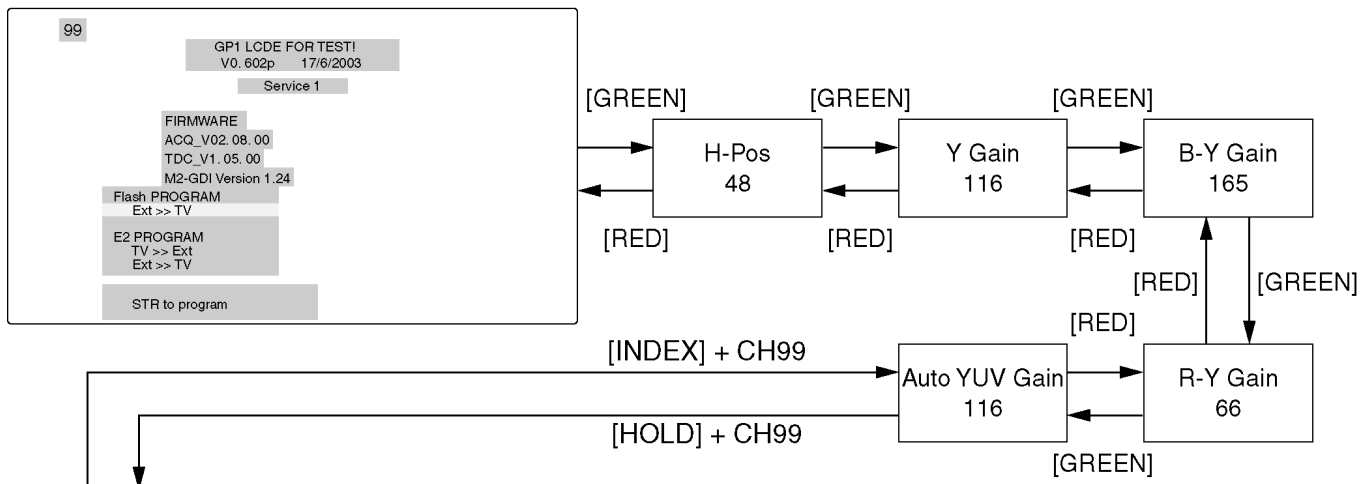
6.2. How to enter SERVICE 2

1. Set the channel to CH99.
2. Press HOLD button on remote control.

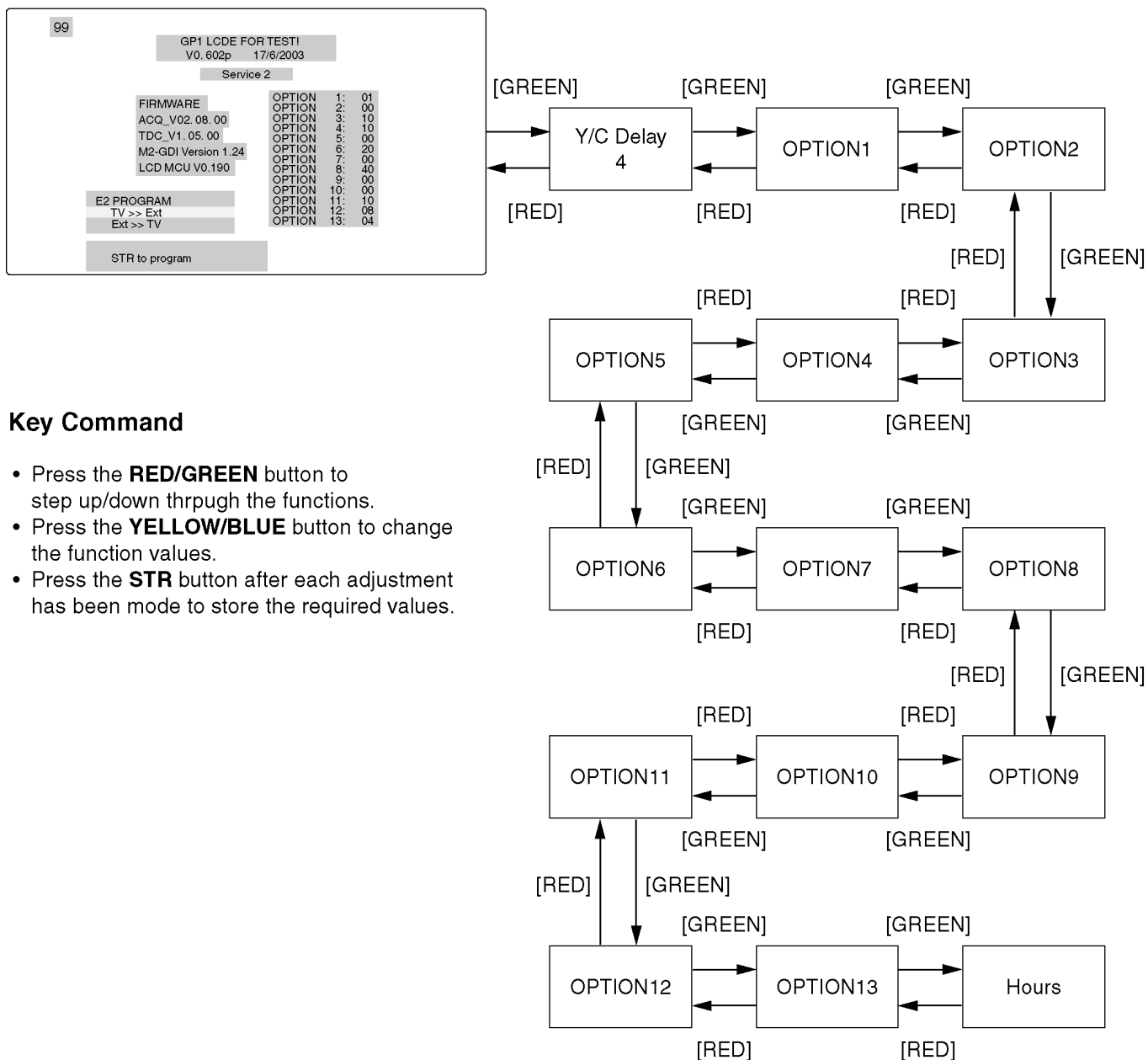
Note:

To exit to Service mode, press N or Power button on remote control.

SERVICE 1



SERVICE 2



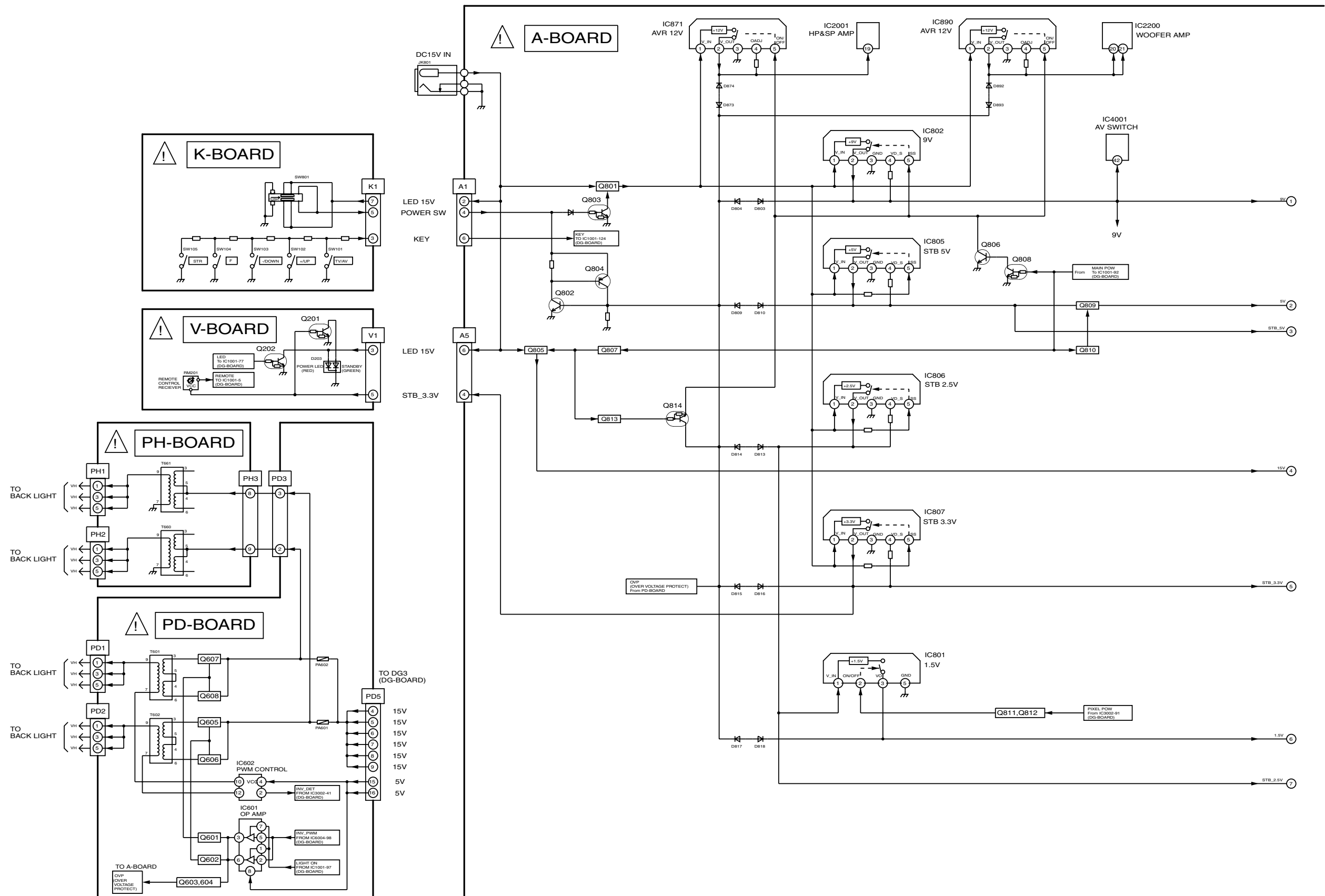
Key Command

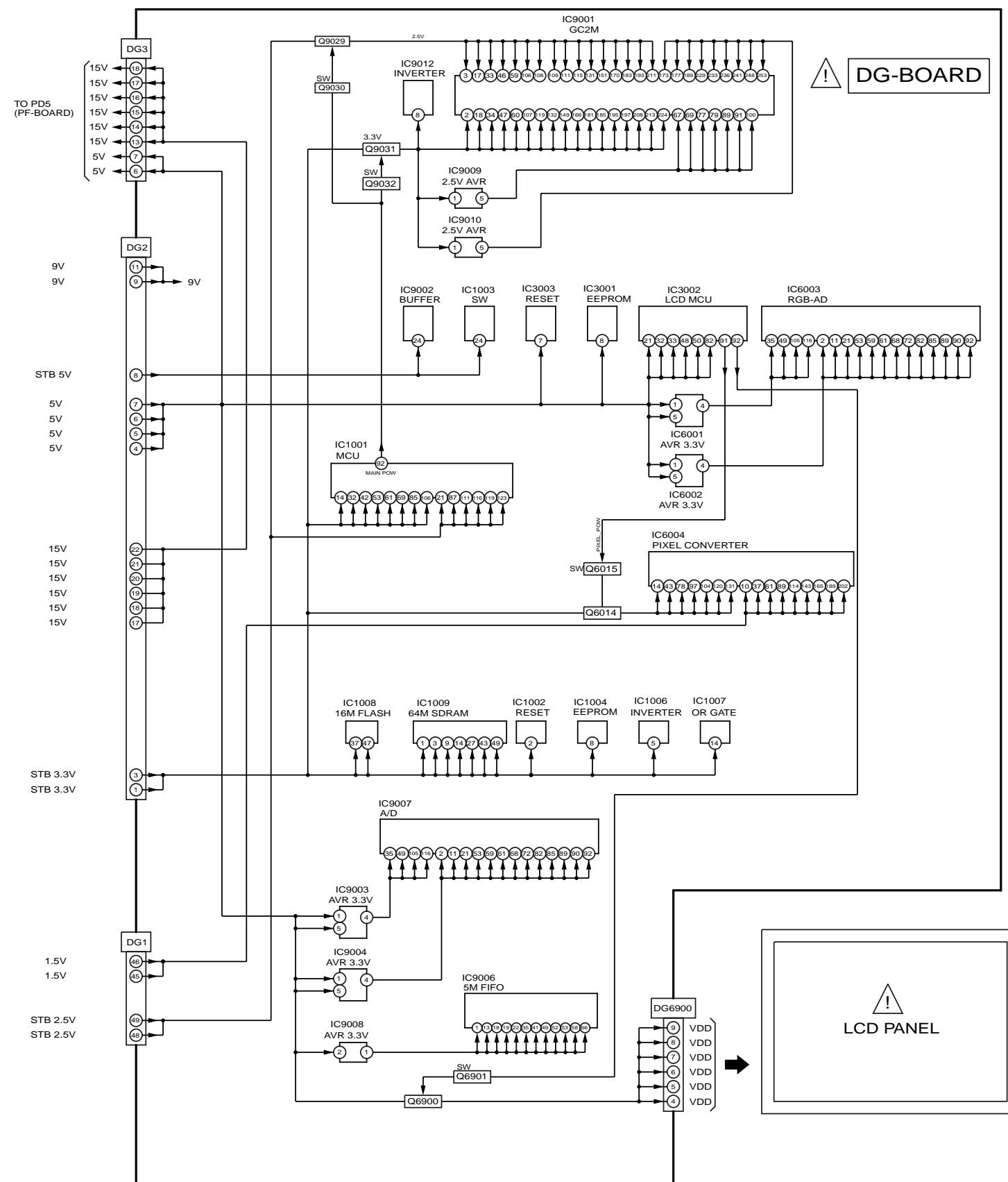
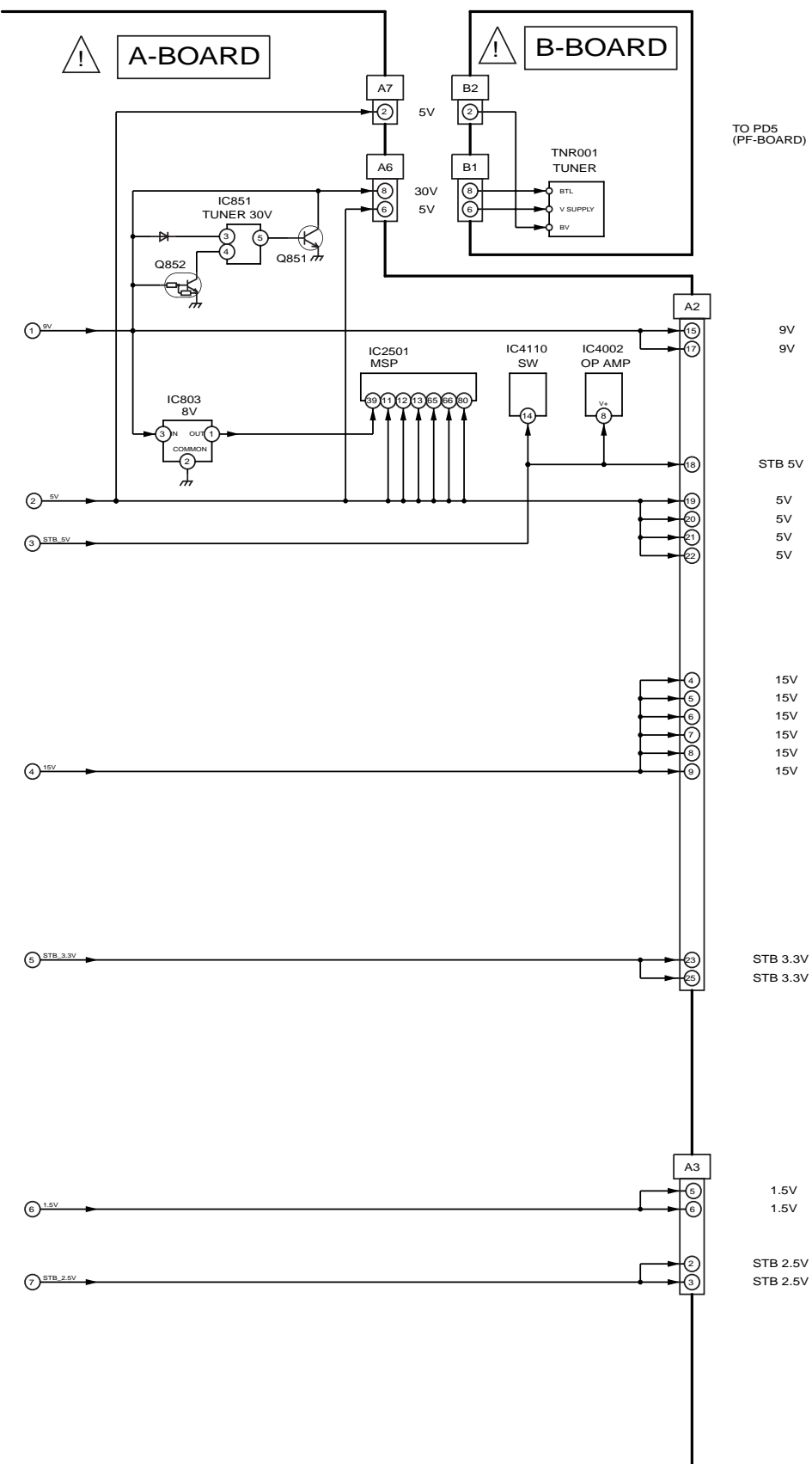
- Press the **RED/GREEN** button to step up/down through the functions.
- Press the **YELLOW/BLUE** button to change the function values.
- Press the **STR** button after each adjustment has been made to store the required values.

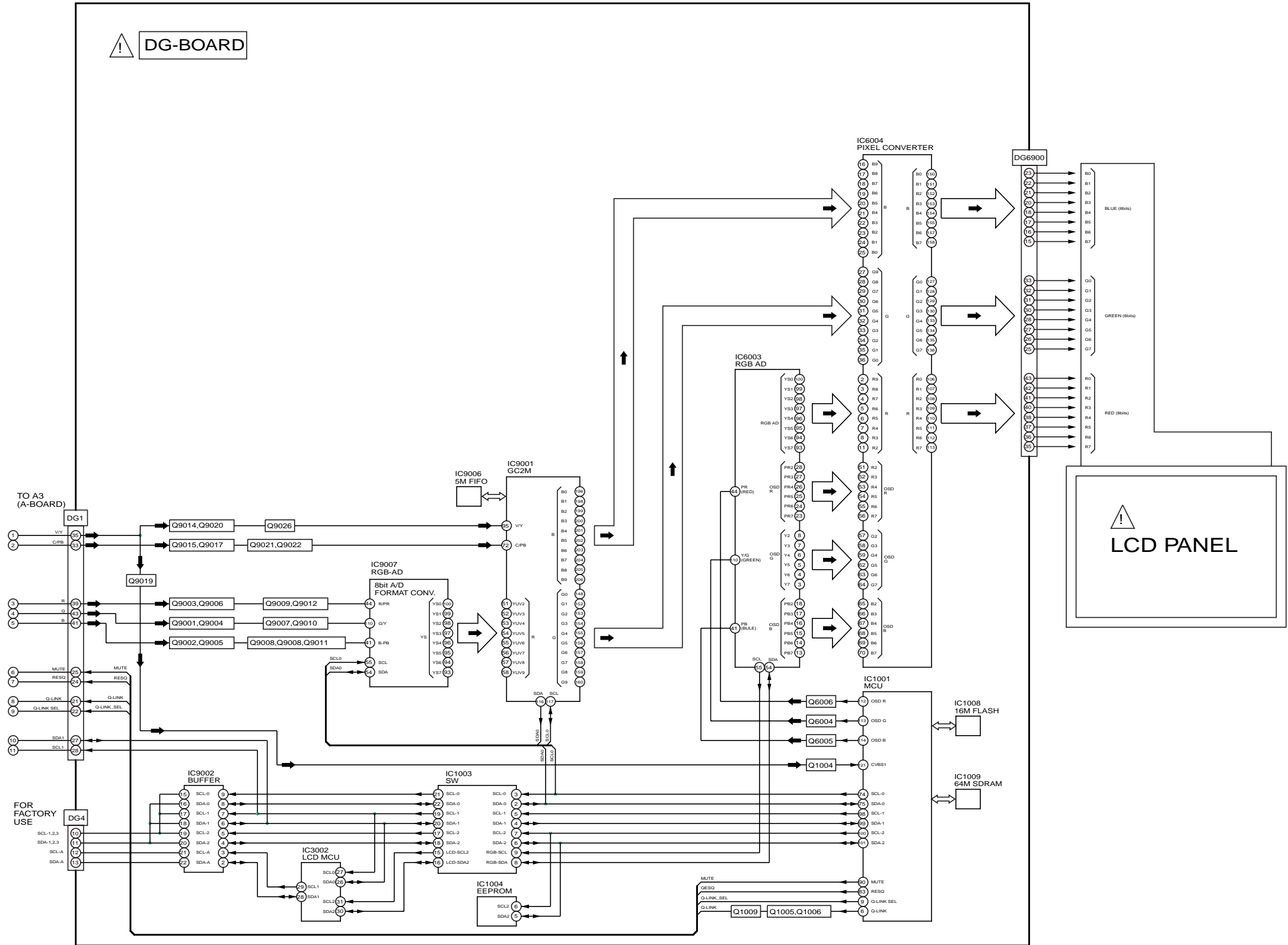
6.3. Option Description

option1		01		
b0	1	Colour system	Auto(1)	
b1	0		SECAM(1)	
b2	0		NTSC(1)	
b3	0		M.NTSC(1)	
b4	0	free		
b5	0	free		
b6	0	free		
b7	0	free		
option2		00		
b0	0	CH Plan	ASIA / M.E. / HK/UK / CHINA(1)	
b1	0		NZ/INDNES(1)	
b2	0		AUSTRALIA(1)	
b3	0		E.EUROPE(1)	
b4	0		SPECIAL(1)	
b5	0		AMERICA(1)	
b6	0		CATV(1)	
b7	0		JAPAN(1)	
option3		10		
b0	0	free	without sub-picture(0), with sub-picture(1)	
b1	0	free	2tuner(1), 1tuner(0)	
b2	0	reserve(22inch for Asia)	enable(1)	
b3	0	free	enable(1)	
b4	1	LT(1), TA(0)	16:9 (1) 4:3 (0) (change multi window/aspect operation)	
b5	0	HYPER	UHF only (0), UHF/VHF (1)	
b6	0	SIF	I only(0), BG only(1)	
b7	0		I/BG/DK/L(2), BG/DK(3)	
option4		10		
b0	0	A2 enable	enable(1)	
b1	0		not use	
b2	0		not use	
b3	0		not use	
b4	1	NICAM enable	enable(1)	
b5	0		not use	
b6	0		not use	
b7	0		not use	
option5		00		
b0	0	A2 select 6.5MHz	5.742MHz(0) 6.742MHz(1)	
b1	0	NICAM priority	ASIA/M.E.(1)	
b2	0		HK/UK(1)	
b3	0		CHINA(1)	
b4	0		NZ/INDN(1)	
b5	0		AUSTRALIA(1)	
b6	0		E.EURO(1)	
b7	0		SPECIAL(1)	
option6		20		
b0	0	free		
b1	0	SASO enable	SASO enable(1)	
b2	0	Noise mute	Noise mute enable(0)	
b3	0	Monitor out AV1 mute	Monitor out AV1 mute(1)	
b4	0	free		
b5	1	Tuner	MACO tuner (0), tuner (1)	
b6	0	free		
b7	0	IF I2C	I2C controlled Tuner IF module (1)	
option7		00		
b0	0	Power up EC-Mode	Power on EC enable (1)	
b1	0	CH Blanking	Blanking enable (1)	
b2	0	AV Blanking	Blanking enable (1)	
b3	0	Auto WIDE	WSS enable only in aspect Auto (0), WSS always enable (1)	
b4	0	Volume correction	TV Volume correction enable (1)	
b5	0	AVLink	Q-Link off selectable in menu (1)	
b6	0	MPX/NICAM display	Display NICAM (0), Display MPX (1)	
b7	0	Owner ID	not use	

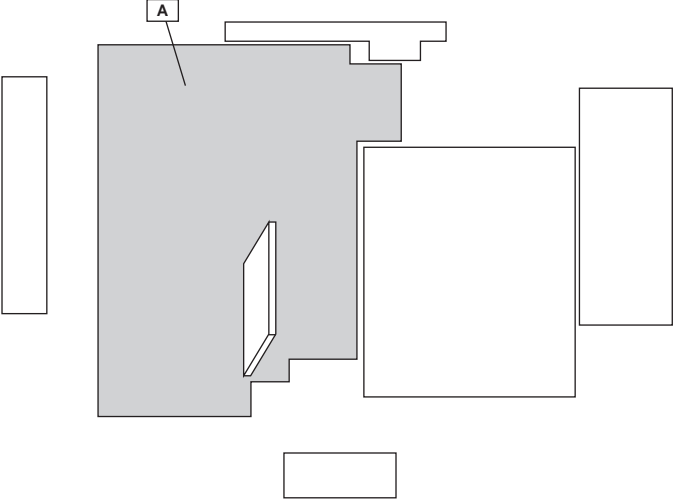
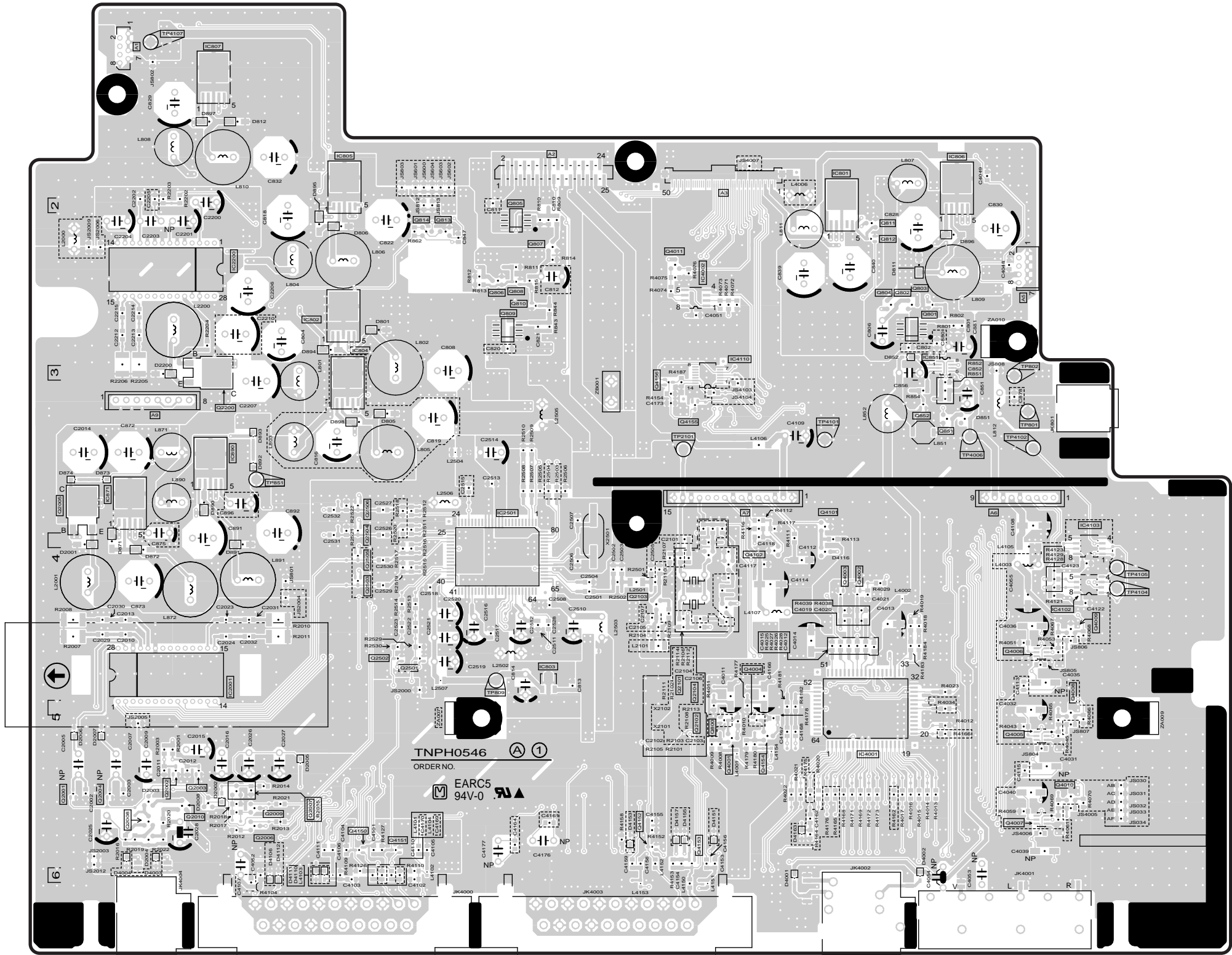
option8	40		
b0	0	Teletext CH Refresh	not use
b1	0	free	
b2	0	free	
b3	0	RF Attenuation	Enable(1)
b4	0	Fine tuning	Enable(1)
b5	0	Search speed	Slow(1) Fast(0)
b6	1	TEXT	Reserved
b7	0	TEXT TOP	TOP enable (1)
option9	00		
b0	0	free	
b1	0	free	
b2	0	free	
b3	0	free	
b4	0	free	
b5	0	shipping Sound menu	MUSIC(0) / CINEMA(1)
b6	0	Volume curve	Volume curve1(0), curve2(1)
b7	0	free	
option10	00		
b0	0	OSD language	not use
b1	0	ACI all country	ACI enable(1), only Netherlands(0)
b2	0	ACI auto MP	ACI aut multi packing enable(1)
b3	0	ACI offset	ACI offset fot VCR prog. enable(1)
b4	0	Blue Back	not use
b5	0	free	
b6	0	free	
b7	0	free	
option11	10		
b0	0	Acuity Demo	enable(1)
b1	0	free	
b2	0	Shop mode	enable(1)
b3	0	User aspect Just	enable(1)
b4	1	User aspect 14:9	enable(1)
b5	0	NICAM C4 bit	enable(1)
b6	0	ID-1	enable(1)
b7	0	free	
option12	08	Area Option	
b0	0	Asia	Asia(1), europe(0)
b1	0	Australia	not use
b2	0	Ireland/India	Ireland(1)
b3	1	UK	UK(1)
b4	0	MELCOA	not use
b5	0	28 inch	28 inch (1) when only Large size=0, Wide=1, PTV=0
b6	0	Large size	52(1)/42(0) for RTV, 36(1)/32(0) for Wide, 34(1)/29(0) for 4:3
b7	0	free	
option13	04	Temporary	
b0	0	GC2V ES2	ES2(1), ES1(0)
b1	0	Tuner IF 38.9	38.9MHz(0), 39.5MHz(1) [UK/Ireland]
b2	1	NewALBD	Zoom1 or Zoom3 (0), Zoom1 or 14:9(1)
b3	0		
b4	0		
b5	0		
b6	0		
b7	0		







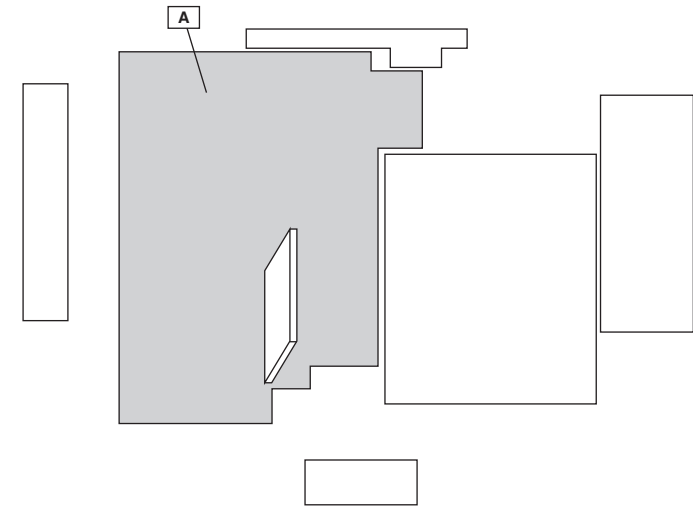
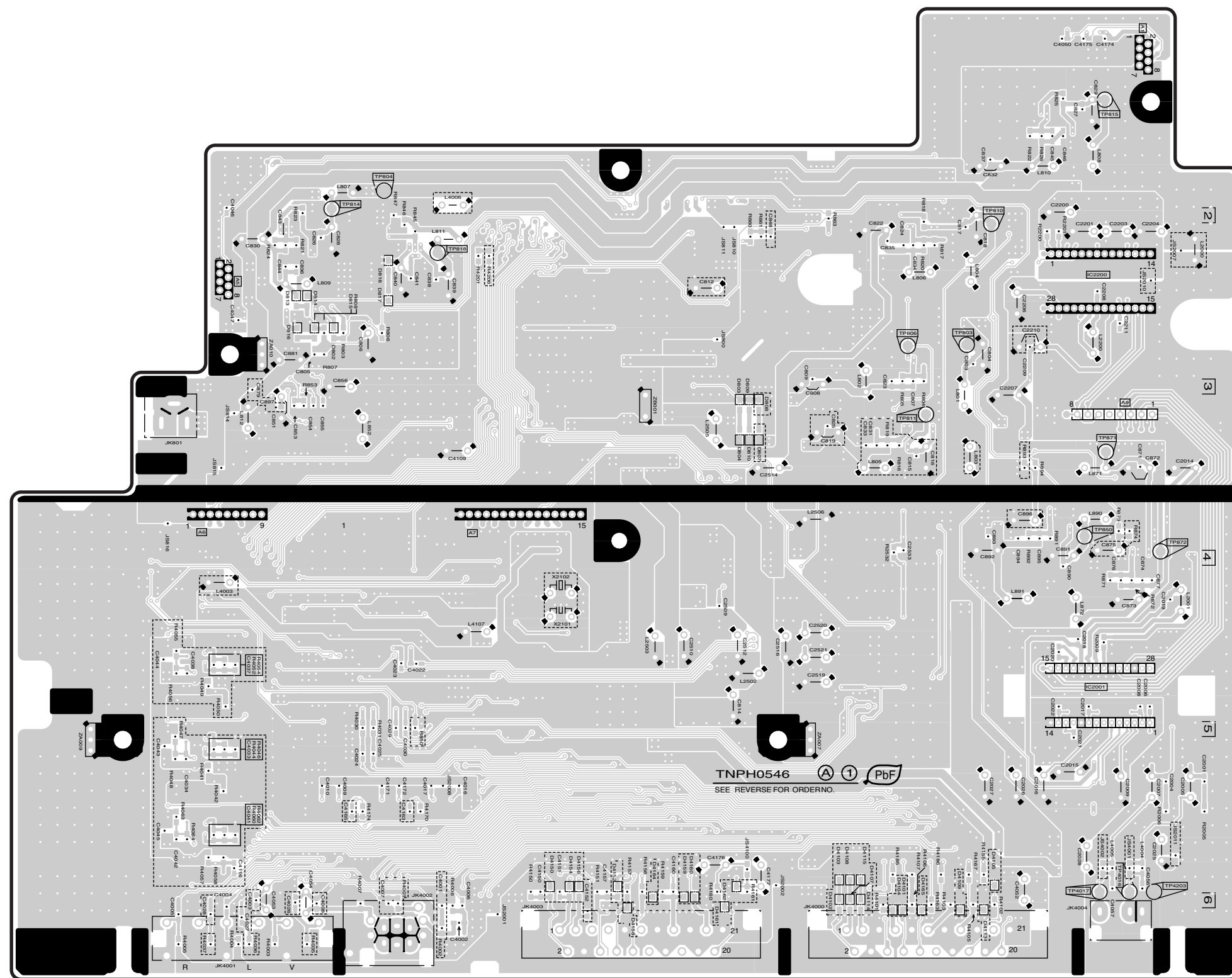
A-BOARD (COMPONENT SIDE)
TNPH0546



Parts Location

A-BOARD (COMPONENT SIDE)					
IC		TRANSISTOR			
IC801	E-5	Q800	D-2	Q2501	C-2
IC802	B-4	Q801	F-4	Q2502	C-2
IC803	D-2	Q802	E-4	Q2503	C-3
IC804	B-4	Q803	F-4	Q2504	C-3
IC805	B-5	Q804	E-4	Q2505	C-3
IC806	F-5	Q805	C-5	Q2506	C-3
IC807	B-6	Q806	C-4	Q4001	E-2
IC851	F-4	Q807	C-5	Q4002	E-3
IC871	A-3	Q808	C-4	Q4003	E-3
IC890	B-3	Q809	C-4	Q4004	E-2
IC2001	B-2	Q810	C-4	Q4005	F-2
IC2200	B-4	Q811	E-5	Q4006	F-2
IC2501	C-3	Q812	E-5	Q4007	F-1
IC4001	E-2	Q813	C-5	Q4008	F-2
IC4002	D-4	Q814	C-5	Q4009	F-3
IC4102	F-3	Q851	F-4	Q4010	F-2
IC4103	F-3	Q852	F-4	Q4011	D-5
IC4110	D-4	Q2001	A-2	Q4101	E-3
		Q2002	B-2	Q4102	E-3
		Q2003	B-2	Q4150	C-1
		Q2004	A-2	Q4151	C-1
		Q2005	A-3	Q4152	D-1
		Q2006	B-2	Q4153	D-1
		Q2007	B-2	Q4154	E-2
		Q2008	A-2	Q4155	D-4
		Q2009	B-2	Q4156	D-4
		Q2010	B-2		
		Q2101	D-2		
		Q2102	D-2		
		Q2103	D-3		
		Q2104	D-2		
		Q2200	B-4		
TP					
TP801	F-4				
TP802	F-4				
TP809	C-2				
TP851	B-3				
TP2101	D-3				
TP4006	F-4				
TP4101	E-4				
TP4102	F-3				
TP4104	G-3				
TP4105	G-3				
TP4107	A-6				

A-BOARD (FOIL SIDE)
TNPH0546



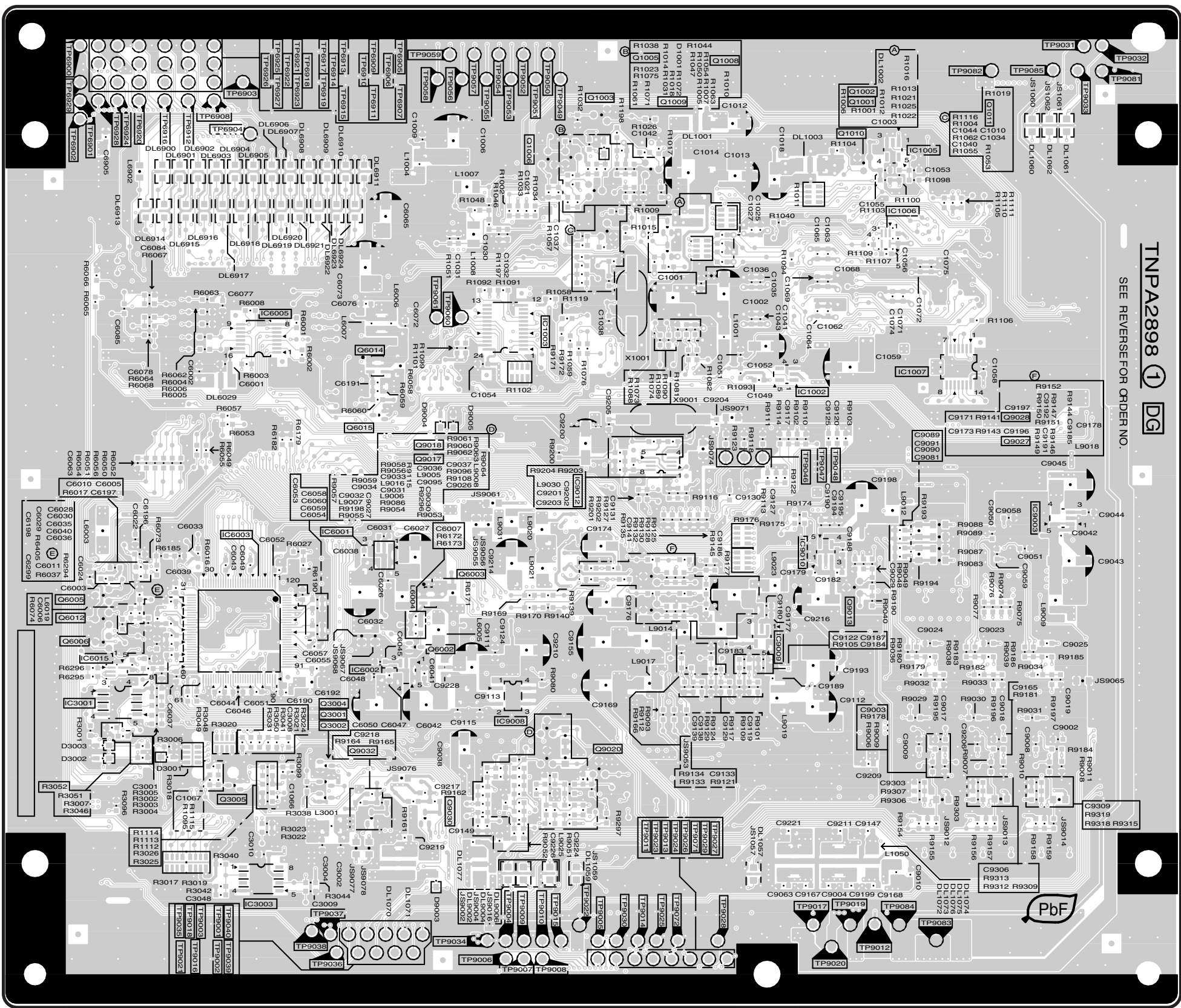
Parts Location

A-BAND (FOIL SIDE)	
IC	
IC2001	F-2
IC2200	F-4
TP	
TP803	F-5
TP804	C-5
TP806	E-4
TP810	F-5
TP811	F-4
TP814	B-5
TP815	F-5
TP818	C-5
TP850	F-3
TP871	F-4
TP872	G-3
TP4016	G-1
TP4017	F-1
TP4203	G-1



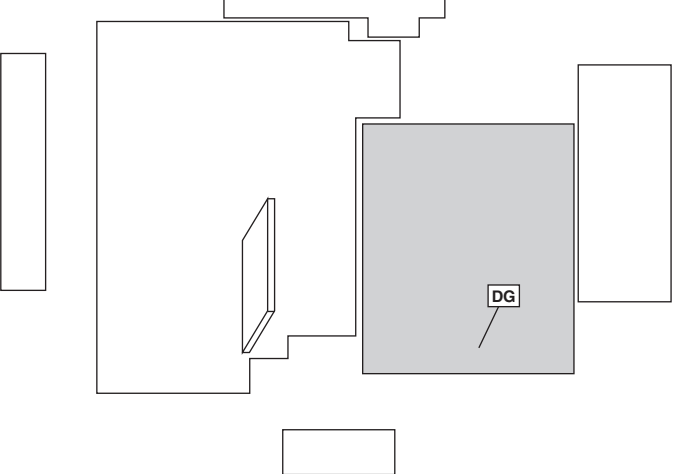
DG-BOARD (COMPONENT SIDE)			
IC		Q9007	B-3
IC1001	C-5	Q9008	B-3
IC1004	D-4	Q9009	A-3
IC1008	B-5	Q9010	B-3
IC1009	C-5	Q9011	B-3
IC3002	F-2	Q9012	A-3
IC6004	F-4	Q9014	D-1
IC9001	D-3	Q9015	D-2
IC9002	E-4	Q9016	E-2
IC9004	B-4	Q9019	D-2
IC9006	E-3	Q9021	C-2
IC9007	B-3	Q9022	C-2
IC9011	E-3	Q9024	C-2
		Q9026	C-2
TRANSISTOR		Q9029	E-2
Q1004	E-5	Q9031	E-2
Q1007	E-5	Q9033	B-2
Q1012	D-4	Q9034	B-2
Q3003	G-2	Q9035	B-2
Q6004	G-4	TP	
Q6010	F-3	TP9086	C-1
Q6011	F-3		
Q6013	F-3		
Q6900	F-5		
Q6901	G-5		
Q9001	B-2		
Q9002	B-2		
Q9003	A-2		
Q9004	B-2		
Q9005	B-2		
Q9006	B-2		

DG-BOARD (FOIL SIDE)
TXNDG10HNK

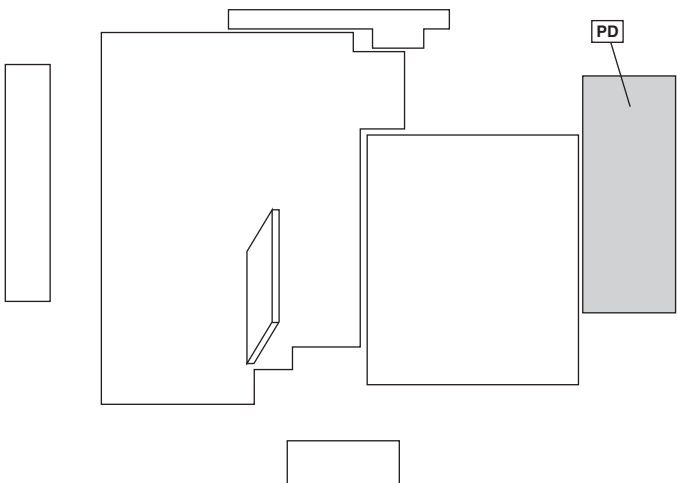
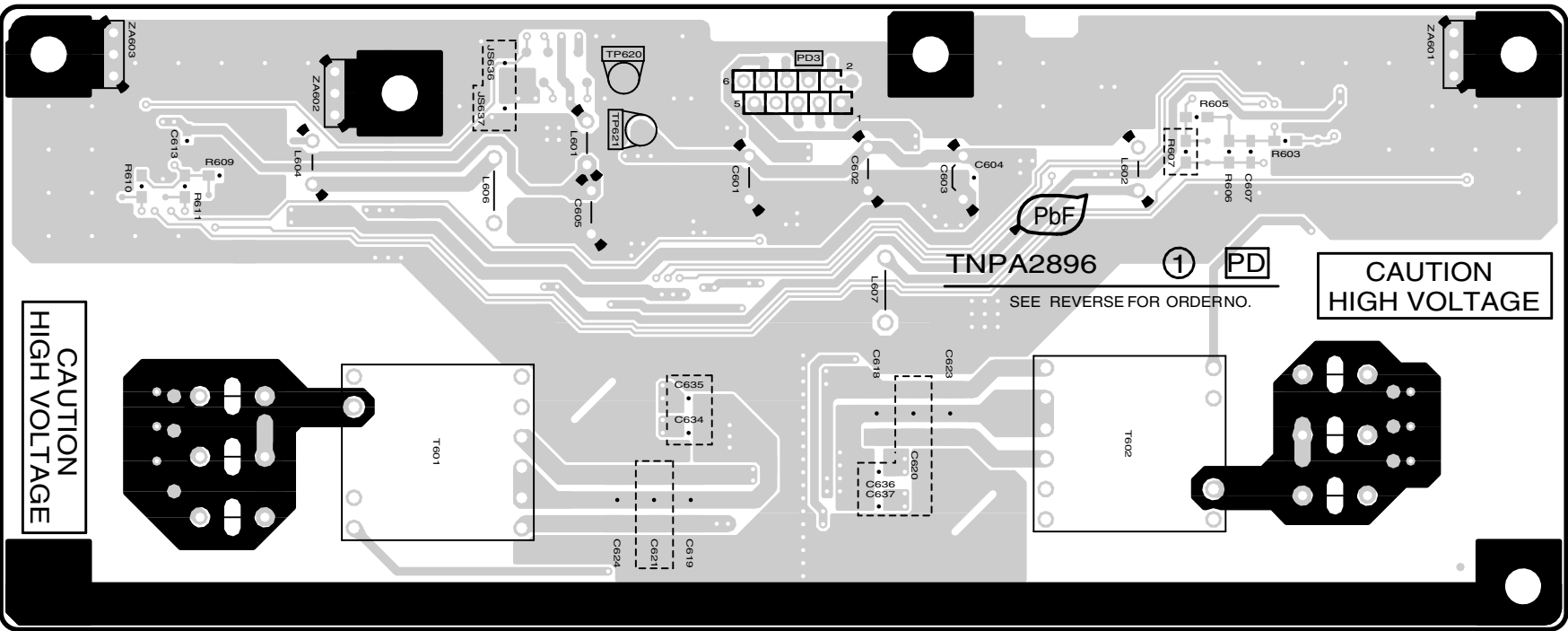


Parts Location

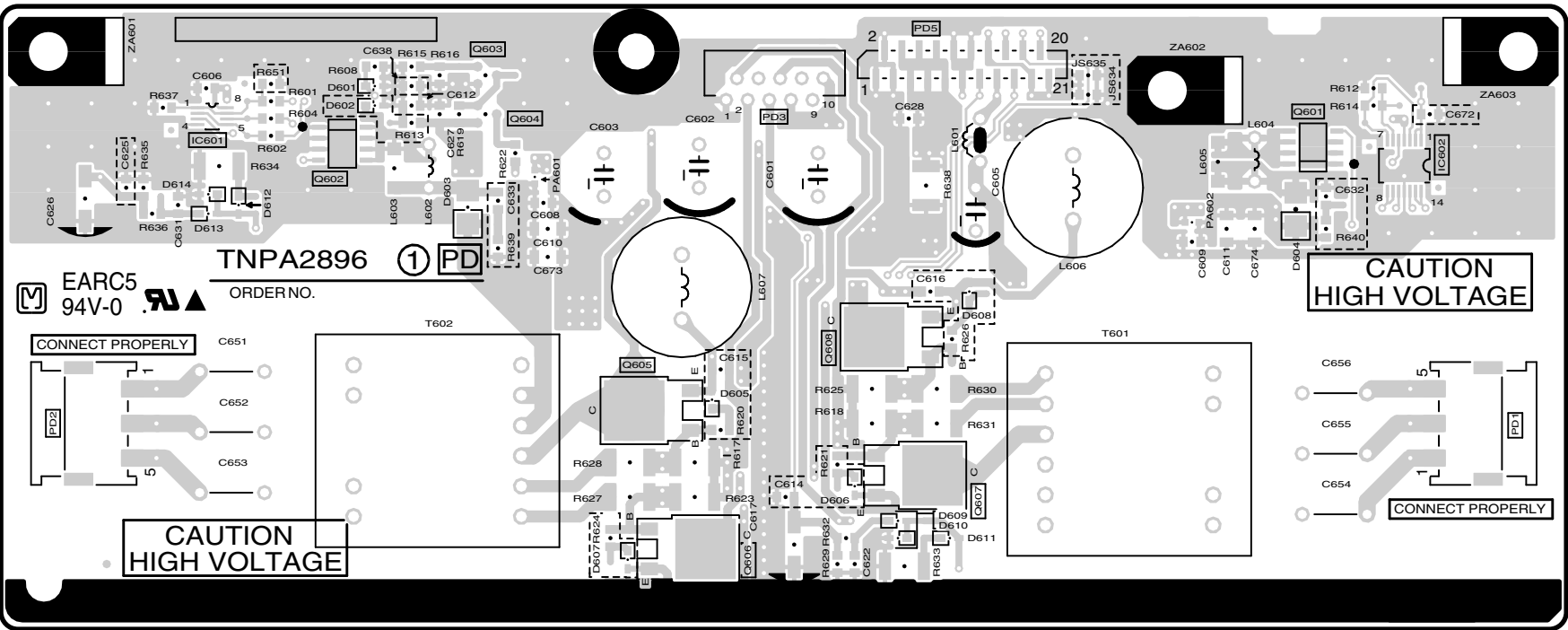
DG-BOARD (FOIL SIDE)					
IC		TRANSISTOR			
IC1002	E-4	TP6900	A-6	TP9018	B-1
IC1003	D-5	TP6901	A-6	TP9019	E-1
IC1005	F-5	TP6902	A-6	TP9020	E-1
IC1006	F-5	TP6903	B-6	TP9021	B-1
IC1007	F-4	TP6904	B-6	TP9022	D-1
IC3001	A-2	TP6905	C-6	TP9023	D-2
IC3003	B-1	TP6906	C-6	TP9024	D-2
IC6001	C-3	TP6907	C-6	TP9025	D-1
IC6002	C-3	TP6908	B-6	TP9026	D-2
IC6003	B-3	TP6909	C-6	TP9027	E-2
IC6005	B-5	TP6910	C-6	TP9028	E-1
IC6015	A-3	TP6911	C-6	TP9029	E-2
IC9003	F-3	TP6912	B-6	TP9030	D-1
IC9008	C-2	TP6913	C-6	TP9031	G-6
IC9009	E-3	TP6914	C-6	TP9032	G-6
IC9010	E-3	TP6915	C-6	TP9033	C-1
IC9012	D-4	TP6916	B-6	TP9034	C-1
TP		TP6917	B-6	TP9035	B-1
Q1001	E-6	TP6918	B-6	TP9036	C-1
Q1002	E-6	TP6919	B-6	TP9037	C-1
Q1003	D-6	TP6920	A-6	TP9038	B-1
Q1005	D-6	TP6921	B-6	TP9039	B-1
Q1006	D-5	TP6922	B-6	TP9040	B-1
Q1008	E-6	TP6923	B-6	TP9041	E-4
Q1009	D-6	TP6924	A-6	TP9042	E-4
Q1010	E-6	TP6925	B-6	TP9043	E-4
Q1011	F-2	TP6926	B-6	TP9044	D-6
Q3001	C-2	TP6927	B-6	TP9045	D-6
Q3002	C-2	TP6928	A-6	TP9046	D-6
Q3004	C-2	TP6929	A-6	TP9047	D-6
Q3005	B-2	TP9001	B-1	TP9048	D-6
Q6002	C-3	TP9002	B-1	TP9049	D-6
Q6003	C-3	TP9003	B-1	TP9050	D-6
Q6005	A-3	TP9004	D-1	TP9051	D-6
Q6006	A-3	TP9005	D-1	TP9052	D-6
Q6012	A-3	TP9006	C-1	TP9053	C-6
Q6014	C-4	TP9007	D-1	TP9054	C-6
Q6015	C-4	TP9008	D-1	TP9055	C-6
Q9013	E-3	TP9009	D-1	TP9056	C-6
Q9017	C-4	TP9010	D-1	TP9057	C-6
Q9018	C-4	TP9011	D-2	TP9058	C-6
Q9020	D-2	TP9012	F-1	TP9059	C-6
Q9027	F-4	TP9013	D-2	TP9060	C-5
Q9028	F-4	TP9014	D-1	TP9061	C-5
Q9030	C-2	TP9015	D-1	TP9071	E-2
Q9032	C-2	TP9016	B-1	TP9072	D-1
		TP9017	E-1	TP9073	G-6



PD-BOARD (FOIL SIDE)
TNPA2896



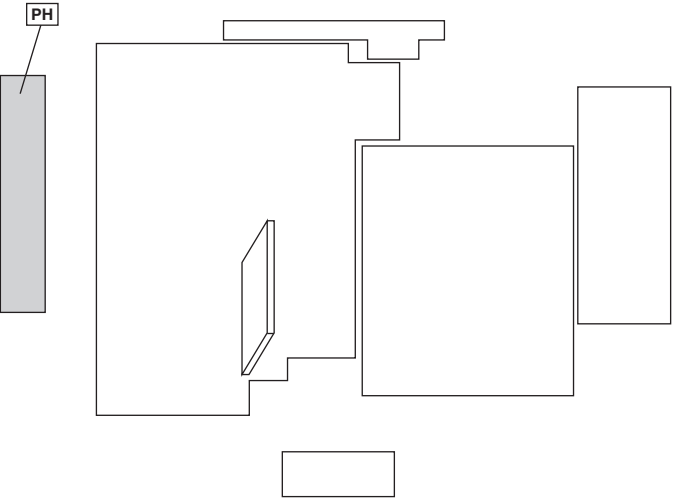
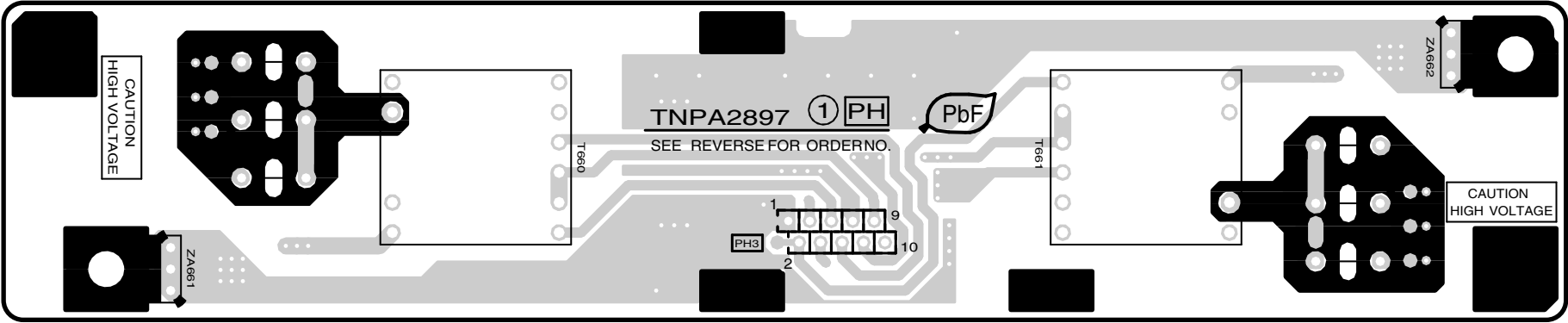
PD-BOARD (COMPONENT SIDE)
TNPA2896



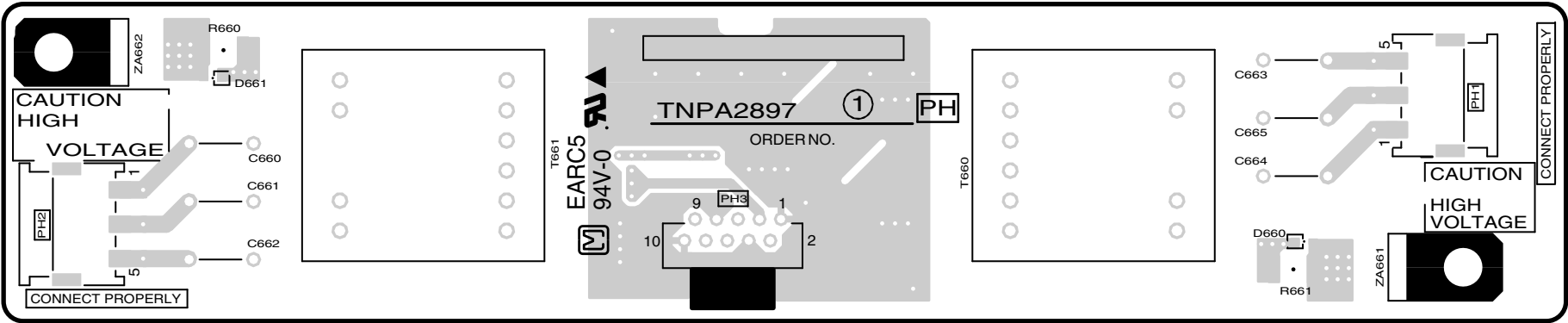
Parts Location

PD-BOARD	
IC	
IC601	A-3
IC602	F-2
TRANSISTOR	
Q601	F-3
Q602	B-2
Q603	C-3
Q604	C-3
Q605	C-2
Q606	C-1
Q607	D-1
Q608	D-2
TP	
TP620	C-6
TP621	C-6

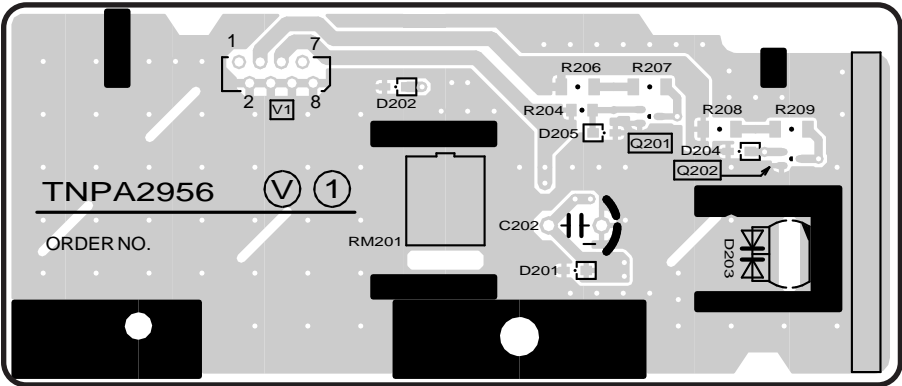
PH-BOARD (FOIL SIDE)
TNPA2897



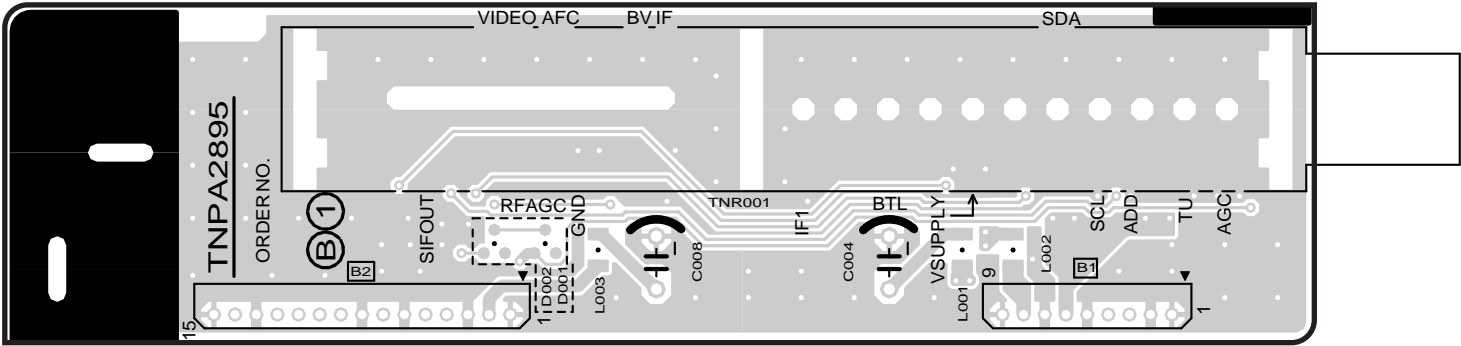
PH-BOARD (COMPONENT SIDE)
TNPA2897



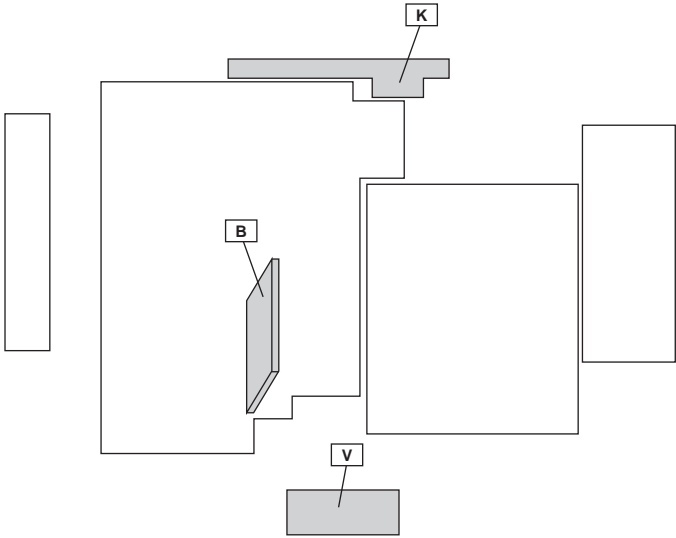
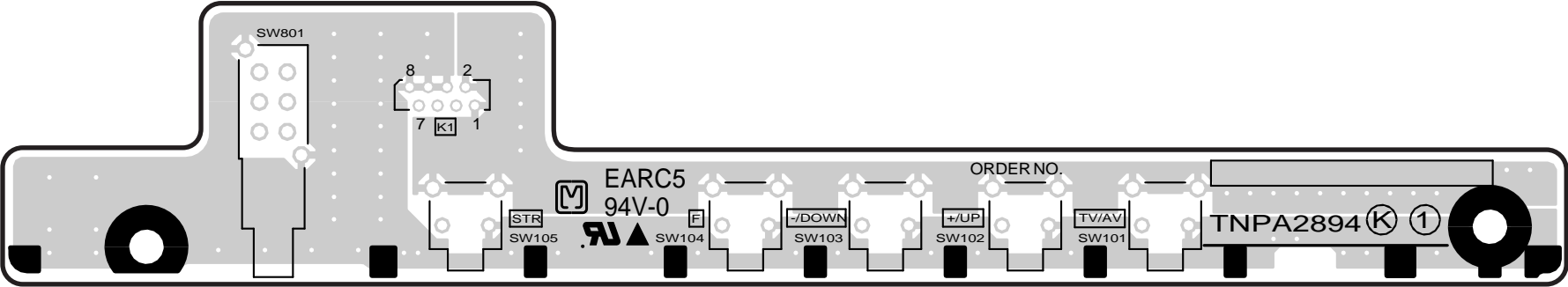
V-BOARD (COMPONENT SIDE)
TNPA2956



B-BOARD (COMPONENT SIDE)
TNPA2895



K-BOARD (COMPONENT SIDE)
TNPA2894



TX-22LT3
V-BOARD TNPA2956
B-BOARD TNPA2895
K-BOARD TNPA2894

TX-22LT3
V-BOARD TNPA2956
B-BOARD TNPA2895
K-BOARD TNPA2894



TX-22LT3
A-Board (2 of 3), B-Board, K-Board, and V-Board Schematic Diagram

TX-22LT3
A-Board (2 of 3), B-Board, K-Board, and V-Board Schematic Diagram